McQuay®
Air Conditioning

SERVICE GUIDE BOOK

McQuay®
Air Conditioning

Engineered for flexibility and performance.™

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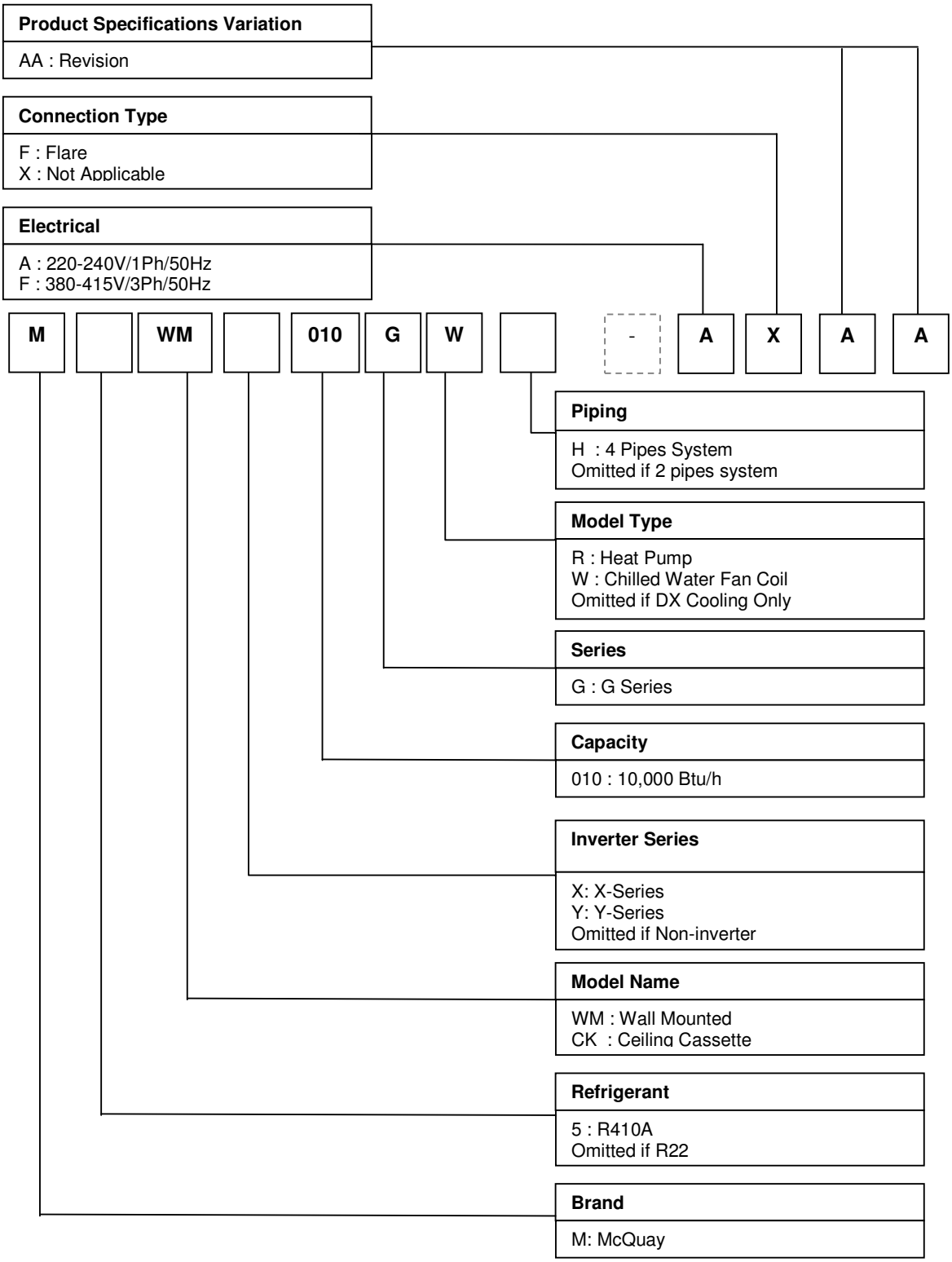
1.0 Model Name

1.1 Product Name Description

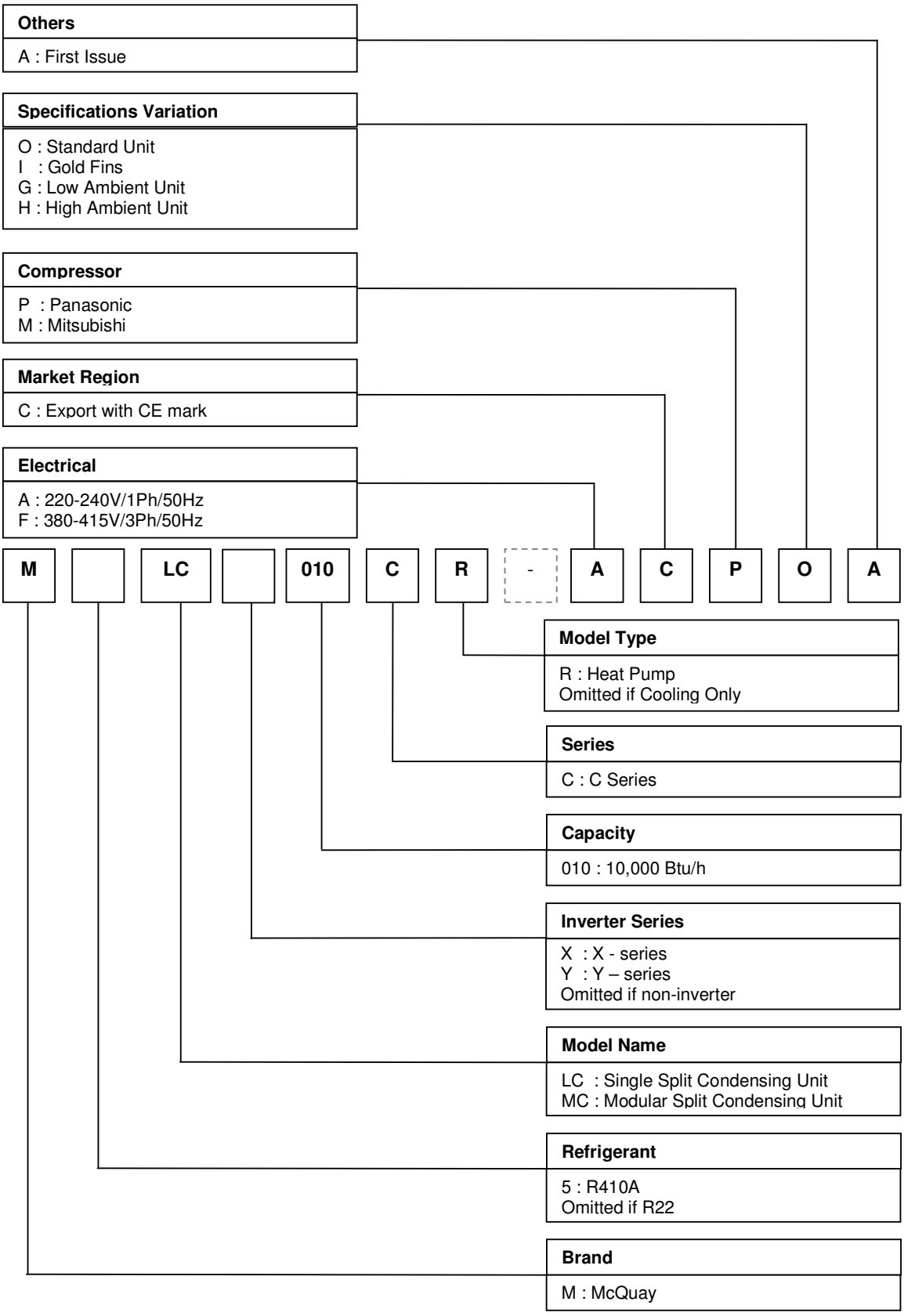
No.	Description	Generic Model Name	N Brand
1	Wall Mounted Fan Coil Unit	WM / 5WM	MWM / M5WM
2	Wall Mounted AC Inverter Fan Coil Unit	WMV	MWMV
3	Wall Mounted DC Inverter Fan Coil Unit	5WMX	M5WMX
4	Wall Mounted DC Inverter-Y Fan Coil Unit	5WMY	M5WMY
4	Ceiling Exposed Fan Coil Unit	CE / 5CE	MCM / M5CM
5	Ceiling Cassette Fan Coil Unit	CK / 5CK	MCK / M5CK
6	Ceiling Concealed Fan Coil Unit	CC / 5CC	MCC / M5CC
7	Ducted Split Blower Unit	SB	MDB
8	Chilled Water Fan Coil Unit	CW	MCW
9	Water Source Heatpump Split Unit	WSS / 5WSS	MWSS / M5WSS
10	Horizontal Water Source Heatpump Unit	WH	MWH
11	Air Cooled Mini Chiller	AC / 4AC / 5AC	MAC / M4MAC / M5MAC
12	Single Split Condensing Unit	SL / 4SL / 5SL	MLC / M4LC / M5LC
13	Single Split AC Inverter Condensing Unit	SLV	MLCV
14	Single Split DC Inverter Condensing Unit	5SLX	M5LCX
15	Single Split DC Inverter Condensing Unit	5SLY	M5SLY
15	Modular Split Condensing Unit	MSS / 4MSS	MMC / M4MC
16	Multi Split Series	MSD / 4MSD MST / 4MST MSH	MMSD / M4MSD MMST / M4MST MMSH
17	Multi Split AC Inverter Condensing Unit	MSV	MMSV
18	Multi Split DC Inverter Condensing Unit	5MSX	M5MSX
19	Multi Split DC Inverter Condensing Unit	5MSY	M5MSY
20	Multi Digital Scroll Units	MDS/ 5MDS	MMDS/ M5MDS
21	Horizontal Condensing Unit	HDC / 5HDC	MHDC / M5HDC
22	Vertical Condensing Unit	VCU	MVCU
23	Air Cooled Roof Top Packaged Air Conditioner	RT / 4RT	MRT / M4RT
24	Air Cooled Inverter Mini Chiller	5ACV	M5ACV

1.2 Nomenclature

Indoor Unit



Outdoor Unit



2.0 Conversion Table

2.1 Conversion Table

Capacity

Btu/hr	MBH	kCal/Hr	kW
1	0.001	0.252	0.293×10^{-3}
1000	1	252	0.293
3.968	0.004	1	1.162×10^{-3}
3412	3.412	860.04	1

Pressure

PSI	kg/cm^2	W.G.		Pascal (Pa)
		(in.)	(ft.)	
1	0.07	27.7	2.309	0.69×10^{4}
14.22	1	394.08	32.84	9.81×10^{4}
3.61×10^{-2}	2.538×10^{-3}	1	0.083	248.84
1.45×10^{-4}	0.1×10^{-4}	0.004	3.349×10^{-4}	1

Flow Rate

L/s	m^3/hr	m^3/s	U.S. GPM	CFM
1	3.6	0.001	15.85	2.119
0.278	1	0.278×10^{-3}	4.403	0.588
1000	3600	1	15850	2119
0.063	0.227	0.063×10^{-3}	1	0.1337
0.472	1.7	0.472×10^{-3}	7.481	1

Temperature

℉ = (18 x ℃) + 32

$$°C = \frac{°F - 32}{1.8}$$

Velocity

fps	m/s	fpm
1	0.305	60
3.281	1	196.9
0.017	0.005	1

Volume

L	m^3	U.S. G.P.M.	ft^3
1	0.001	0.264	0.0353
1000	1	264	35.3
3.785	3.785×10^{-3}	1	0.134
28.315	0.028	7.48	1

Area

in^2	ft^2	m^2	cm^2
1	6.94×10^{-3}	6.452×10^{-4}	6.452
144	1	0.093	929.03
1550.06	10.764	1	1×10^{4}
0.155	1.076×10^{-3}	1×10^{-4}	1

3.0 Product Mainboard vs. Handset Matrix

Type	No.	Main Board (IC) / Model	L2.0	L2GSN	L208A	W_2_03A	U1SB125	SQ2.0	VA2.0	2P206569-4	VA3.0	Handset	
												Standard	Optional
DX	1	WM - F Series	✓									G17	SLM3 + AC5300 / Netware 3
	2	WM - G Series	✓									G17	SLM3 + AC5300 / Netware 3
	3	WMS - G Series	✓									G17	SLM3 + AC5300 / Netware 3
	4	WM – J Series		✓								G17	-
	5	CK - A/B/C/E Series			✓							G17	SLM3 + AC5300 / Netware 3
	6	CE - D Series			✓							G17	SLM3 + AC5300 / Netware 3
	7	CE - E Series			✓							G17	SLM3 + AC5300 / Netware 3
	8	CC - C Series			✓							SLM3	Netware 3
	9	CC - D Series			✓							Netware 3	SLM3
	10	SB - B/C Series											
		SB 75 – 100B/BR			✓							SLM3	Netware 3
		SB 125 – 150B/BR					✓					SLM3	-
		SB 125CR					✓					SLM3	-
		SB 150B2/BR2 – 600B4/BR4						✓				SQ-LCD	-
	11	SB – D/ER Series											
		SB 75 – 100D/ER			✓							SLM3	Netware 3
		SB 125 – 150D/ER					✓					SLM3	-
		SB 125D2 – 500D4						✓				SQ-LCD	-
		SB 125ER2 – 600ER4						✓				SQ-LCD	-
	12	RT Series											
		RT 55 – 120A/AR					✓					SLM3	-
		RT 150 – 420A/AR						✓				SQ-LCD	-
	13	WMX – G Series							✓			G17	SLM3 + AC5300
		CKX – A/C Series									✓	G17	SLM3 + AC5300
		CEX – E Series									✓	G17	SLM3 + AC5300
		CCX – C Series									✓	SLM3	Netware 3
	14	WMY – J series				✓						G17/ GS01	Netware 3
	15	WMY – K Series								✓		APJ1	-

Type	No.	Main Board (IC) / Model	W2	MC1.0	LWS2	APM01CB	APM02D	Handset	
								Standard	Optional
CW FCU	13	WM – GW Series	✓					G17	SLM3 + AC5300 / Netware 3
	14	CK – AW/AWH/CW Series	✓					G17	SLM3 + AC5300 / Netware 3
	15	CE – DW Series	✓					G17	SLM3 + AC5300 / Netware 3
	16	CE – EW Series	✓					G17	SLM3 + AC5300 / Netware 3
	17	CC – CW Series	✓					SLM3	Netware 3
	18	SB – BW Series						N/A	-
Mini Chiller	19	AC – C Series							
		AC 20 – 60C/CR		✓				C. Panel	-
		AC 80 – 150C/CR		✓				C. Panel	-
		5AC 20 – 25C/CR		✓				C. Panel	-
		5AC 30 – 55C/CR		✓				C. Panel	-
WSHP	20	5WMWS – GR			✓			G17	SLM3 + AC5300 / Netware 3
	21	5CKWS – AR/CR			✓			G17	SLM3 + AC5300 / Netware 3
	22	5CCWS – CR			✓			SLM3	Netware 3
	23	WH – B Series							
		WH 11 – 20B/BR				✓		SLM15A	-
		WH 25 – 70B/BR					✓	APW04A	-

4.0 Controller Development History

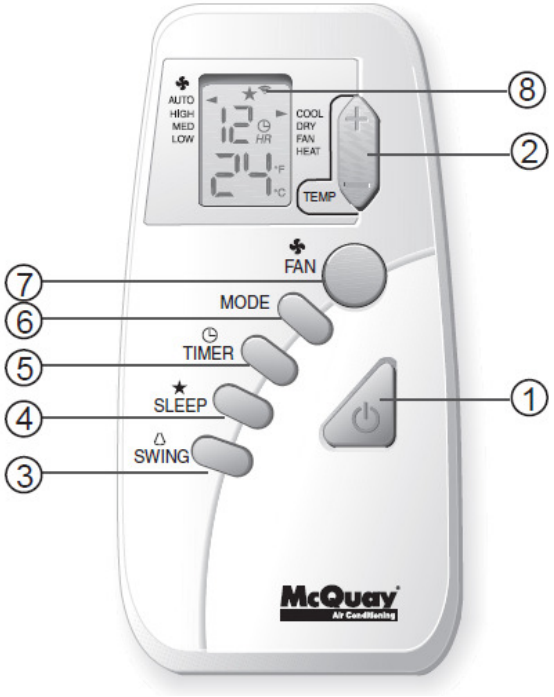
Year	Main Board	Handset		Model		Remarks
		Wireless	Wired	Cooling	Heating	
1996	Challenger 2.1 & 2.2	G3	-	WM 10/15D WM 20/25C	WM 10/15DR WM 20/25CR	Copper sensor
1996	Challenger 2.2	G3	-	WM 07/10E	-	Copper sensor
1997	Challenger 2.4	G3 & G6	-	WM 10/15D WM 20/25C	WM10/15DR WM 20/25CR	
1998	Challenger 2.4	G3 & G6	-	-	WM 07/10ER WM 10/15FR	
1998	Challenger 5	G3 G6	- -	WM 07/10E WM 10/15F	-	
1999	Challenger C3A Challenger C3B Challenger C3B	G3 & G6	SLM2 (10 core wire)	CK-A CE-C/D CC-B/MSB/HSB	CK-AR CE-CR/DR CC-R/MSB-R/HSB-R	
2000	Mini Chiller MCH01	-	-	AC (40-125)B	AC (40-125)BR	Cooling & Heatpump
2001	Chilled Water W1V2	G6	Netware 1	WM-FW / CE-DW / CC-CW / CK-AW / HSB-BW		Convertible PCB
2001	Sequential Controller	-	Sequential Controller	SB (150-500)B	SB (150-500)BR	Multiple compressor
2001	Universal Board					
	D1.0	G6	-	WM (10-25)F	-	Cooling only
	U1.3	G6	-	-	WM (10-25)FR	Heatpump only
	U1.4	G6	SLM3 (4 core wire)	CE-D / CK-A / CC-C	CE-DR / CK-AR / CC-CR	Cooling & Heatpump
2001	D2.0	G6 / G7	-	WM (10-25)F	-	Cooling only
2001	Mini Chiller SZMC01	-	-	AC/4AC (40-58)A, AC/4AC75-125B	AC/4AC (40-58)AR, AC/4AC75-125BR	Cooling & Heatpump
2001	Inverter VA1.9 (Indoor) VB1.0 (Outdoor)	G7 Turbo	-	-	WMV10FR SLV10BR	In set form only
2002	Sequencer Controller	-	SQ-LCD	SB (150-500)D	SB (150-500)DR	Multiple compressor
2002	D2.0	G7	-	WM30F	-	Cooling only
	U1.4	G7	SLM3 / Netware 2 (optional)	 CK (15/20/25/30)B	WM (10-25)FR, WM30FR CK (15/20/25/30)BR	Heatpump only Cooling & heatpump

Year	Main Board	Handset		Model		Remarks
		Wireless	Wired	Cooling	Heating	
2002	Chilled Water W1V3	G6	SLM3 / Netware 2 (optional)	WM-FW / CE-DW / CC-CW / CK-AW / CK-BW		Valveless application only
2002	Multi Split Indoor, MS10.0	G7	-	-	WMS (10-20)FR	Auto random restart
2003	Mini Chiller MCH03A	-	SC302	AC/4AC(80-150)C	AC/4AC (80-150)CR	Cooling & heatpump
2003	Universal U1SB125	-	SLM3 – single speed	SB (125/150) B1/C1/D1 RT/4RT (60-120)A	SB (125/150) BR1/CR1/DR1 RT/4RT (60-120)AR	Cooling & heatpump
2003	Sequential Controller, SQ	-	SQ-LCD	RT/4RT (150-300)A SB 150B2-600B4 SB 125D2-500D4	RT/4RT (150-300)AR SB 150BR2-600BR4 SB125DR2-500DR2	Cooling & heatpump
2004	U1.4	G8	-	CK (10-20)C	CK (10-20)CR	Cooling & heatpump
2004	L2.0	G11	-	WM (07-15)G WM (20-25)G	WM (07-15)GR WM (20-25)GR	Cooling & heatpump
2004	MC01	-	Chiller Panel	AC (80-150)C	AC (80-150)CR	Cooling & heatpump
	MCH01	-	Chiller Panel	AC (20-60)C	AC (20-60)CR	Cooling & heatpump
2005	L208A	G11	-	CE (15-28)E	CE (15-28)ER	Cooling & heatpump
		-	Netware 3	CC (75-100)D	CC (75-100)DR	Cooling & heatpump
2005	U1.4 Universal U1SB125 Sequential Controller, SQ	- - -	SLM3 SLM3 – single speed SQ-LCD		SB (75-100)ER SB (125-150)ER1 SB 125ER2-600ER4	Heatpump only
2005	Inverter VA2.0	G11	-		5WMX (10-25)GR 5SLX (10-25)CR	In set form only
2005	MC01	-	Chiller Panel		5AC (030-055)CR	Heatpump only
2006	L208A	G7 & G11	SLM3 / Netware 3	CE-D / CK-A/B/C / CC-C	CE-DR / CK-AR/BR/CR / CC-CR	Cooling & Heatpump
		-	SLM3	SB (75-100)B/D	SB (75-100)BR/ER	
2006	Sequential Controller, SQ	-	SQ-LCD	RT (360-420)A	RT (360-420)AR	Cooling & Heatpump
2006	Chilled Water W2	G7 & G11	SML3 / Netware 3	WM-GW / CE-DW / CE-EW / CC-CW / CK-AW/AWH/CW / SB-BW		
2008	L2GSN	G17	-	(5)WM-J/JR		Cooling & Heatpump
2009	W_2_03A	G17	-	5WMY-J/JR		Cooling & Heatpump

5.0 Handset Operating Guide

5.1 G6

Outlook



Operation Guide

1. "ON/OFF" Switch
   - Press to start the air conditioner unit.
   - Press again to stop the unit.

2. Temperature Setting
   - Set the desire room temperature.
   - Press button to increase or decrease the set temperature. Setting range are between 16℃ to 30℃ setting (60℉ to 80℉) (Optional setting from 20℃ to 30℃).
   - Press ▲ or ▼ button simultaneously will toggle the temperature setting between ℃ and ℉.

3. Automatic Air Swing
   - Press the button to activate the automatic air swing function. The swing angle ranging from horizontal to 25° to bottom.

4. "SLEEP" MODE
   - Press the button to activate sleep mode. This mode can only be activated while in cooling or heating mode operation. If it is activated in "COOL" mode, the set temperature will be increase 0.5℃ after 30 minutes, 1℃ after 1 hour and 2℃ after 2 hours. Whereas in "HEAT" mode, the set temperature will decrease by 1℃ after 30mins, 2℃ after 1 hour and 3℃ after 2 hours.
   - This function is available under COOL, HEAT & AUTO mode.

5. Timer Setting
   - Press set button to activate the timer setting (from 1 hour to 15 hour) of the air conditioning unit. It will be in “On” or “Off” condition after the set time depending to the current condition (either from “On” to Off” or vise versa)
   - To cancel the timer setting, press the button continuously until the timer display goes off.

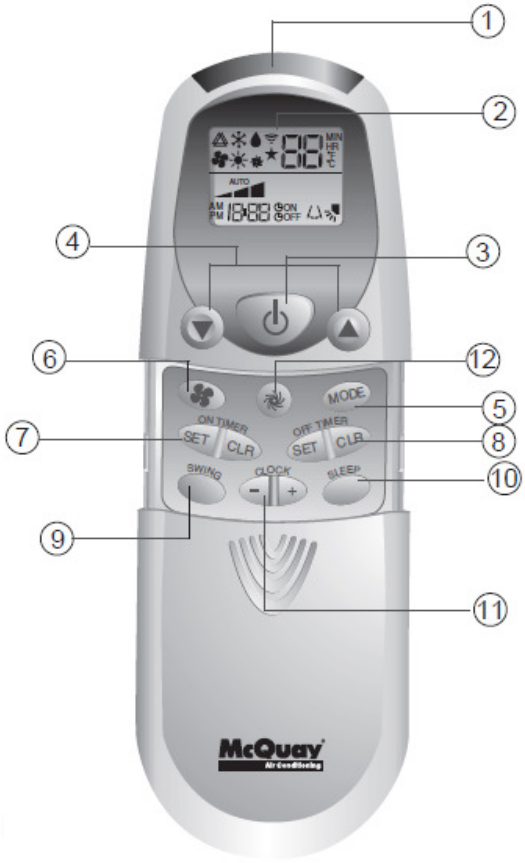
6. Operation Modes
   - Press the “mode” button for select the type of operating mode.
   - Cooling only unit:
     Cool → Dry → Fan.
   - Heatpump unit:
     Auto → Cool → Dry → Fan → Heat

7. Fan Speed and Ventilation Mode Selection
   - Press the button until the desired fan speed is achieved.

8. Signal Transmission Indication
   - Blink to confirm the last setting has been send to the unit.

5.2 G7

Outlook



Operation Guide

1. Transmission Source
   - The source where the signal will be transmitted.

2. Signal Transmission Indication
   - Blink to confirm the last setting has been send to the unit.

3. On/Off Button
   - Press once to start the air conditioner.
   - Press again to stop the unit.

4. Temperature Setting
   - To set the desired room temperature, press the button to increase or decrease the set temperature.
   - The temperature setting range is from 16℃ to 30℃ (Optional setting 18℃ to 30℃).
   - Press both buttons simultaneously to toggle the temperature setting between ℃ and ℉.

5. Operation Mode
   - Press the MODE button to select the type of operating mode.
   - For cooling only unit, the available modes are: COOL, DRY & FAN.
   - For heat pump unit, the available modes are: AUTO, COOL, DRY, FAN & HEAT.

6. Fan Speed Selection
   - Press the button until the desired fan speed is achieved.

7. On Timer Setting
   - Press the SET button will activate the on timer function.
   - Set the desired on time by pressing the SET button continuously. If the timer is set to 7.30am, the air conditioner will turn on at 7.30 sharp.
   - Press the CLR button to cancel the on timer setting.

8. Off Timer Setting
   - Press the SET button will activate the off timer function.
   - Set the desired off time by pressing the SET button continuously.
   - Press the CLR button to cancel the off timer setting.

9. Automatic Air Swing (Optional)
   - Press the SWING button to activate the automatic air swing function.
   - To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

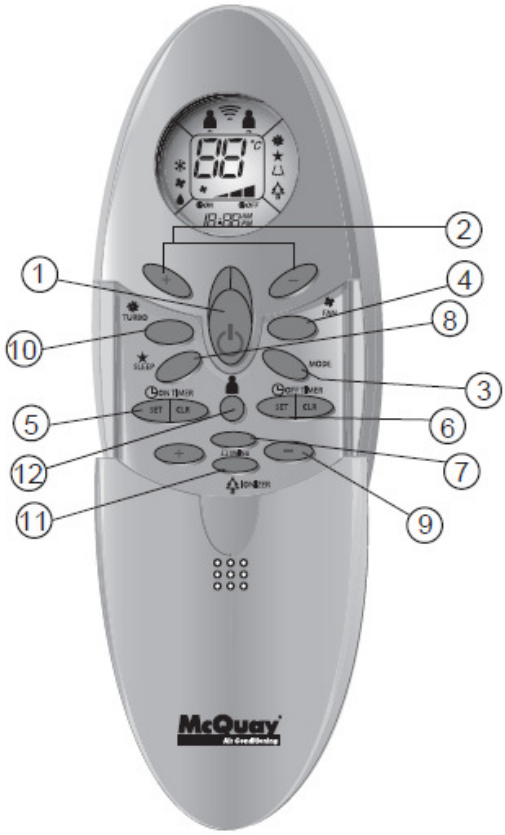
10. Sleep Mode Setting
   - Press the button to activate sleep mode. This function is available under COOL, HEAT & AUTO mode.
   - When it is activated in COOL mode, the set temperature will be increased 0.5℃ after 30mins, 1℃ after 1 hour and 2℃ after 2 hours.
   - When it is activated in HEAT mode, the set temperature will be decreased 1℃ after 30mins, 2℃ after 1 hour and 3℃ after 2 hours.

11. Clock Time Setting
   - Press button + or - to increase or decrease the clock time.

12. Turbo Function (Optional – Only Applicable To Inverter Unit)
   - Press button for fast cooling or heating operation.
   - The temperature will be increased internally if it is in the HEAT mode, decreased if in COOL or DRY mode. Fan speed will be increased if it is not at maximum speed.
   - The temperature & fan speed will resume to user setting if the button is pressed again or after 20mins.
   - Available under HEAT, COOL & DRY modes only.

5.3 G11

Outlook



Operation Guide

1. “ON/OFF” Button
   - Press once to start the air conditioner unit.
   - Press again to stop the unit.

2. Temperature Setting
   - To set the desired room temperature, press ▲ the button to increase or ▼ button to decrease then set temperature.
   - The temperature setting range is from 16℃ to 30℃.
   - Press both buttons simultaneously to toggle and from ▲ ℃ to▼ ℉ setting.

3. Operation Mode
   - Press the MODE button to select the type of operating mode.
   - For cooling only unit, the available modes are: COOL (❄), DRY (💧) and FAN (🌀).
   - For heat pump unit, the available modes are: AUTO, COOL (❄), DRY (💧), FAN (🌀) and HEAT (☀).

4. Fan speed selection
   - Press the button continuously will toggle the fan speed in the following order: Low (▁) ——: Med (▁▃) ——: High (▁▃▅) ——: Auto
   - Stop pressing when the desired fan speed appears on the display screen.

5. ON Timer Setting
   - Press the SET button will activate the on timer function.
   - Set the desired on time by pressing the SET button continuously. If the timer is set to 7.30am, the air conditioner will turn on at 7.30am sharp.
   - Press the CLR button to cancel the on timer setting.

6. OFF Timer Setting
   - Press the SET button will activate the off timer function.
   - Set the desired off time by pressing the SET button continuously.
   - Press the CLR button to cancel the off timer setting.

7. Automatic Air Swing
   - Press the SWING (⟳) button to activate the automatic air swing function.
   - To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

8. Sleep Mode Setting
   - Press the **SLEEP** button will activate the sleep mode function. This function is available under COOL, HEAT and AUTO mode.
   - When the unit is operating under cooling mode, the set temperature is increased by 0.5℃ after 30 minutes, 1℃ after an hour, and 2℃ after 2 hours.
   - When the unit is operating under heating mode, the set temperature is decreased by 1℃ after 30 minutes, 2℃ after an hour and 3℃ after 2 hours.

9. Clock Time Setting
   - Press + button to increase the clock time.
   - Press – button to decrease the clock time.

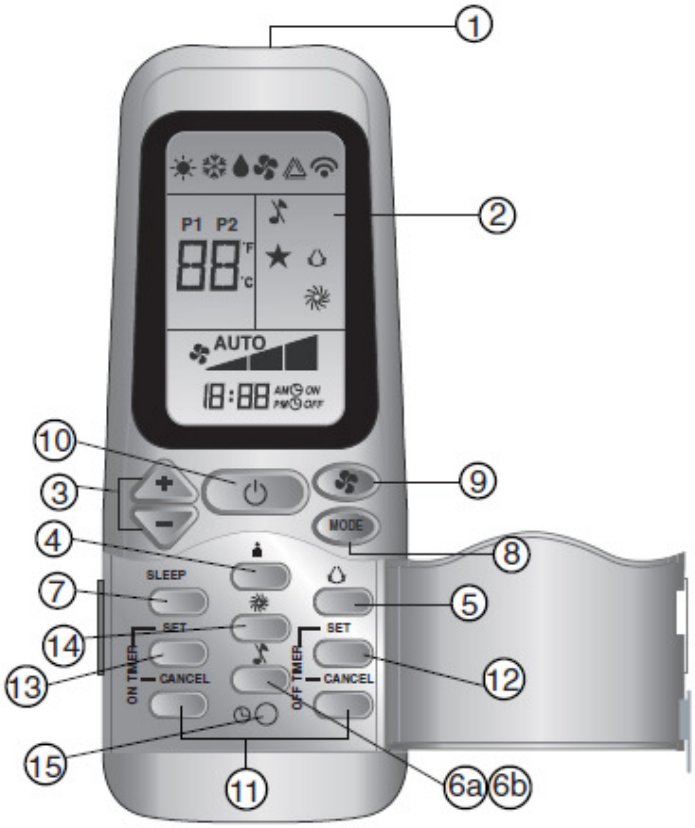
10. Turbo Mode
   - Press the TURBO (✻) button to achieve the required set temperature in a short time.

11. Ionizer
   - Press the Ionizer (▲) button to activate the negative Ion function, which will refresh the indoor air effectively.

12. Personalize Setting
   - Press ☺ button and hold for 3s to initiate personalized setting
   - Set the individual setting e.g. MODE, SET TEMP or FAN SPEED and leave for 4s to save the setting into the program.
   - 2 groups of settings are allowed to store in the handset. Press once to activate the P1 setting, press again to cycle between P1 and P2.
   - Press any key to deactivate the personalize setting.

5.3 G17

Outlook



Operation Guide

1. Transmission Source
    - The source where the signal will be transmitted.
2. Signal Transmission Indication
    - Blink to confirm that the last setting has been transmitted to the unit.

3. Temperature Setting
    - To set the desired room temperature, press the ▲ or ▼ button to increase or decrease the set temperature.
    - Temperature setting range is from 16℃ to 30℃ (optional setting 20℃ to 30℃).

4. Personalize Setting
    - Press and hold for 3s, then P1 will blink. Press again to cycle between P1 and P2.
    - Set the desire setting, then leave the handset for 4s without pressing any key and it will save the setting into the program.
    - Press once to activate the P1 setting, press again to cycle between P1 and P2.
    - Press any key to deactivate the personalize setting.

5. Automatic Air Swing (optional)
   - Press the SWING button to activate the automatic air swing function.
   - To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

6a. Silent Function (For WM – J Series only)
   - Press for quiet operation.
   - Fan speed turn to minimum speed.
   - Press again to deactivate the function.

6b. Ionizer Function (For WM - G series only)
   - Press button to activate the negative ion function, which will refresh the indoor air effectively.

7. Sleep Mode Setting
   - Press the SLEEP button will activate the sleep mode function. This function is available under COOL, HEAT and AUTO mode.
   - When the unit is operating under cooling mode, the set temperature is increased by 0.5℃ after 30 minutes, 1℃ after an hour, and 2℃ after 2 hours.
   - When the unit is operating under heating mode, the set temperature is decreased by 1℃ after 30 minutes, 2℃ after an hour, and 3℃ after 2 hours.

8. Operating Mode
   - Press the MODE button to select the type of operating mode.
   - For cooling only unit, the available modes are: COOL (), DRY () and FAN ().

9. Fan Speed Selection
   - Press the button continuously will toggle the fan speed in the following order:
     Low → Med → High → Auto
   - Stop pressing when the desired fan speed appears on the display screen.

10. “ON/OFF” Button
   - Press one to start the air conditioner unit.
   - Press again to stop the unit.

11. Timer Cancel
   - Press the TIMER CANCEL button to cancel the on timer setting.

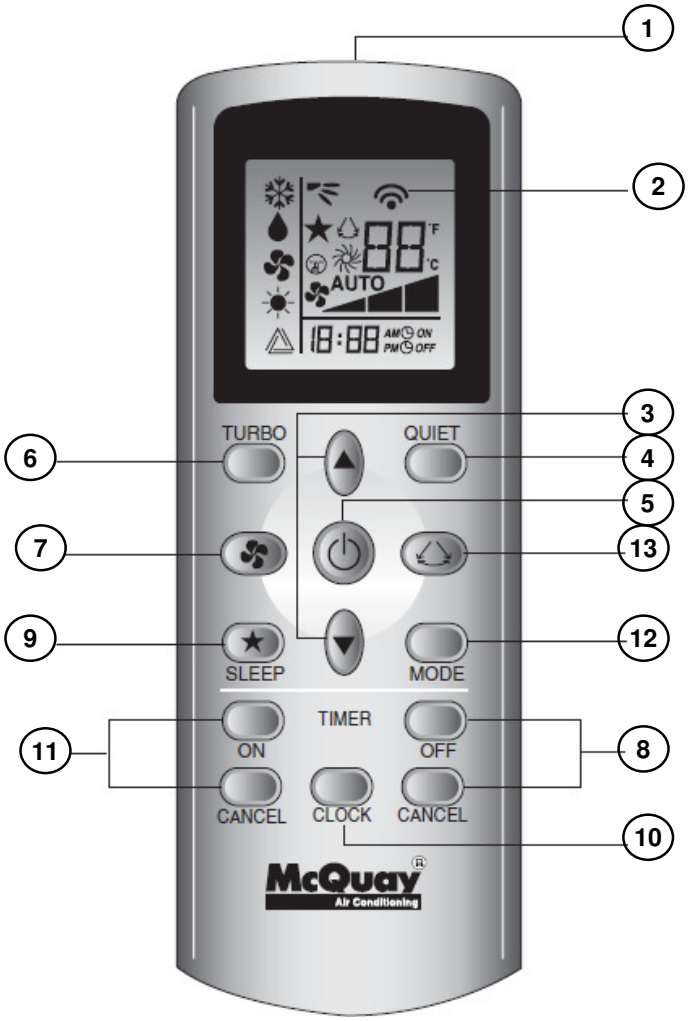
12. OFF Timer Setting
   - Press the OFF TIMER button will activate the off timer function.
   - Set the desired off time by pressing the OFF TIMER button continuously.

13. ON Timer Setting
   - Press the ON TIMER button will activate the on timer function.
   - Set the desired on time by pressing the ON TIMER button continuously. If the timer is set to 7.30am, the air conditioner will turn on at 7.30am sharp.

14. Turbo Function
   - Press for fast cooling.
   - Fan speed turn to maximum speed.
   - Press again to deactivate the function.

15. Clock Time Setting
   - Press and hold to set the clock time.

5.4 GS01



Operation Guide

1. Transmission Source
   - The source where the signal will be transmitted.

2. Signal transmission indication
   - Blink to confirm that the last setting has been transmitted to the unit.

3. ON/OFF Button
   - Press once to start the air conditioner unit.
   - Press again to stop the unit.

4. Fan Speed selection
   - Press the button continuously will toggle the fan speed in the following order:

Low → Med → High → Auto

   - Stop pressing when the desired fan speed appears on the display screen.

5. Operation mode
   - Press the MODE button to select the type of operating mode.
   - For cooling only unit, the available modes are: COOL, DRY and FAN.
   - For heat pump unit, the available modes are: AUTO , COOL, DRY, FAN and HEAT.
   - The AUTO mode is unavailable for chilled water system.
   -

6. Automatic air swing
   - Press the SWING button to activate the automatic air swing function.
   - To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

Swing mode selection method (for CK-E model)
   - Press SWING button for 4 seconds to enter field setting mode. While in field setting mode, it will only show SWING MODE.
   - Press temperature and button to select SWING MODE rotation from Swing Mode 1 to Swing Mode 3.
   - There are 3 different SWING MODE, which are:

     Swing mode 1 Swing mode 2 Swing mode 3

     SWING MODE will not activate unless SWING is activated.
     Swing is indicated by the logo:
   - If no mode changes within 4 seconds, unit will operate according to the selected SWING MODE.

7. Turbo function (model dependent)
   - Press for fast cooling or heating operation.
   - Fan speed turn to maximum speed.
   - Press again to deactivate the function.
   - Available under HEAT, COOL and DRY modes only.
   - Any change of fan speed will deactivate this function.
   - The Turbo function is unavailable for chilled water system and remote control with SWING MODE function.
   -

8. OFF timer setting
   - Press the OFF TIMER CANCEL button will activate the off timer function.
   - Set the desired off time by pressing the OFF TIMER CANCEL button continuously.
   - Press the CANCEL button to cancel the off timer setting.

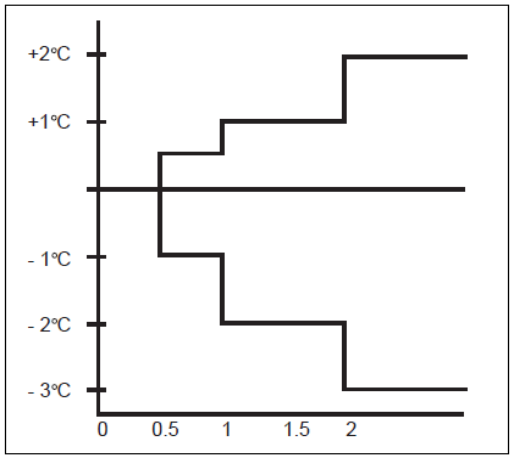
9. Quiet function (model dependant)
   - Press for quiet operation.
   - Fan speed turn to minimum speed.
   - Press again to deactivate the function.
   - Any change of fan speed will deactivate this function.
   - The Silent function is unavailable for chiller water system.
   -

10. Clock time setting
   - Press and hold button to set the clock time.

11. ON timer setting
   - Press the ON TIMER CANCEL button will activate the on timer function.
   - Set the desired on time by pressing the ON TIMER CANCEL button continuously. If the timer is set to 7.30am, the air conditioner will turn on at 7.30am sharp.
   - Press the CANCEL button to cancel the on timer setting.

12. Sleep mode setting

- Press the ★ button will activate the sleep mode function.
- This is an energy saving option. When the unit is operating under cooling mode, the set temperature is increased by 0.5℃ after the first half an hour, another 0.5℃ after the second half an hour and 1℃ after the following 1 hour.
- When the unit is operating under heating mode, the set temperature is decreased by 1℃ after the first half an hour, another 1℃ after the second half an hour and 1℃ after the following 1 hour.
- This function is available under **COOL**, **HEAT** and **AUTO** mode.

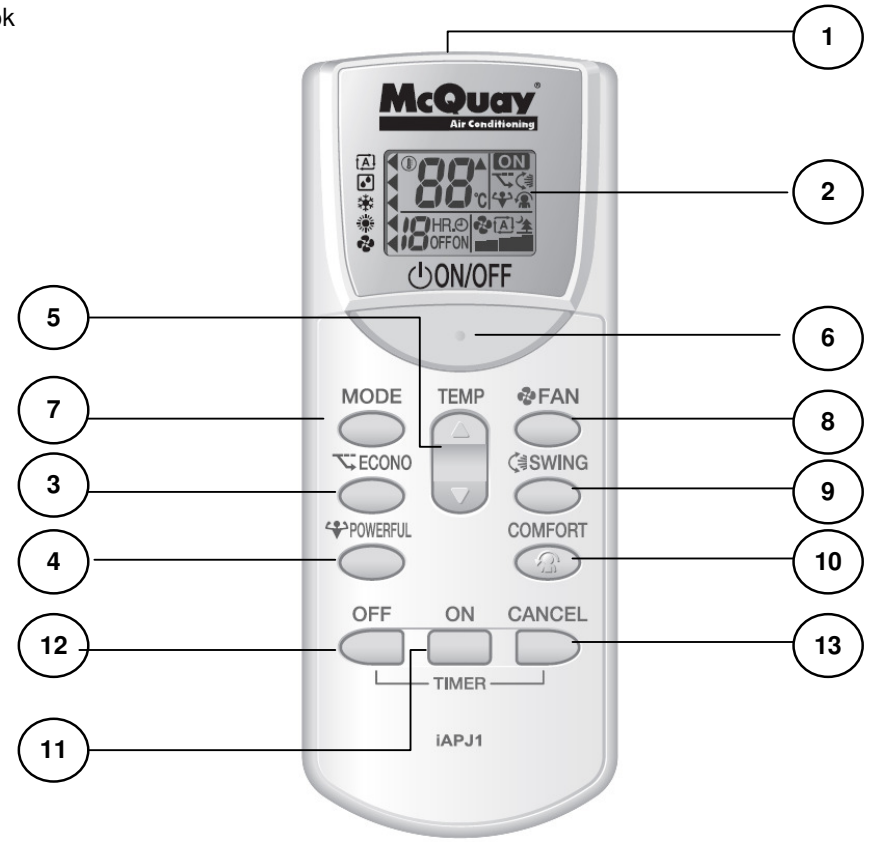


13. Temperature setting

- To set the desired room temperature, press the ▲ or ▼ button to increase or decrease the set temperature.
- The temperature setting range is from 16℃ to 30℃ (Optional setting 20℃to 30℃).
- Press both buttons ▲ and ▼ simultaneously to toggle from ℃ to ℉ setting.

5.5 APJ1

Outlook



Operation Guide

1. Transmission Source
   - The source where the signal will be transmitted.

2. LCD Display
   - It displays the current settings.
   - (In this illustration, each section is shown with its displays on for the purpose of explanations)

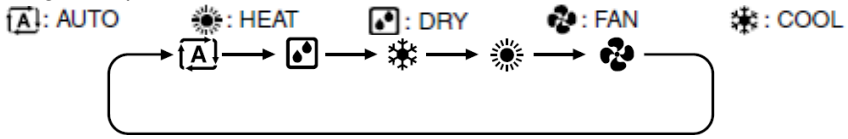
3. ECONO button
   - ECON operation is a function which enables efficient operation by limiting the maximum power consumption value.
   - This function is useful for cases which attention should be paid to ensure a circuit breaker will not trip when the product runs along side other appliances.
   - Press ECONO button to start ECONO operation. The symbol is displayed on the LCD.
   - Press ECONO button to cancel ECONO operation. The symbol button disappears from the LCD.

4. POWERFUL Button
   - POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode.
   - To start POWERFUL operation, press POWERFUL. POWERFUL operation ends in 20 minutes. Then the system automatically operates again with the previous settings which were used before POWERFUL operation. is displayed on the LCD.
   - To cancel POWERFUL operation, press POWERFUL button again. disappears from the LCD.

5. Temperature Settings.
   - It changes the temperature settings.

6. ON/ OFF button
   - Press this button once to start operation. Press again to stop it.

7. Mode Selector Button
   - It selects the operation mode (AUTO/ DRY/ COOL/ HEAT/ FAN).
   - Press MODE button to select operation mode. Each pressing of the button advances the mode setting in sequence.



8. FAN Operation
   - To select the airflow rate setting.
   - 5 levels of airflow rate setting from to plus & are available.
   - When the airflow is set to , the noise from the indoor unit will become quieter.

9. SWING Operation
   - To adjust the airflow direction
   - To start auto swing, press SWING button and the symbol is displayed on the LCD.
   - The flap (horizontal blade) will begin to swing.
   - To set the flap at desired position, press SWING button when the flap has reached the desired position. The flap will stop moving. The symbol disappeared from the LCD.

10. COMFORT AIRFLOW Operation
   - When COMFORT is enable, the flow of air will be upward direction while in COOL operation and in the downward direction while in HEAT operation, which will provide a comfortable wind that will not come in direct contact with people.
   - To start COMFORT AIRFLOW operation, press COMFORT button. The flap will change, preventing air from blowing directly on the occupants of the room. The symbol is displayed on the LCD.
   - Air flow rate is set to AUTO. COOL/ DRY: The flap will go up. HEAT: The flap will go down.
   - To cancel COMFORT AIRFLOW operation, press COMFORT button again. The flap will return to the memorized position before the COMFORT AIRFLOW operation.
   - The symbol will disappear from the LCD.

11. ON TIMER Operation

- To use ON TIMER operation, press ON button.
- HR. ON is displayed on the LCD. Each pressing of ON advances the time setting by 1 hour. The timer can be set between 1 to 12 hours.
- To cancel ON TIMER operation, press CANCEL button. HR. ON will disappear from the LCD.

12. OFF TIMER Operation

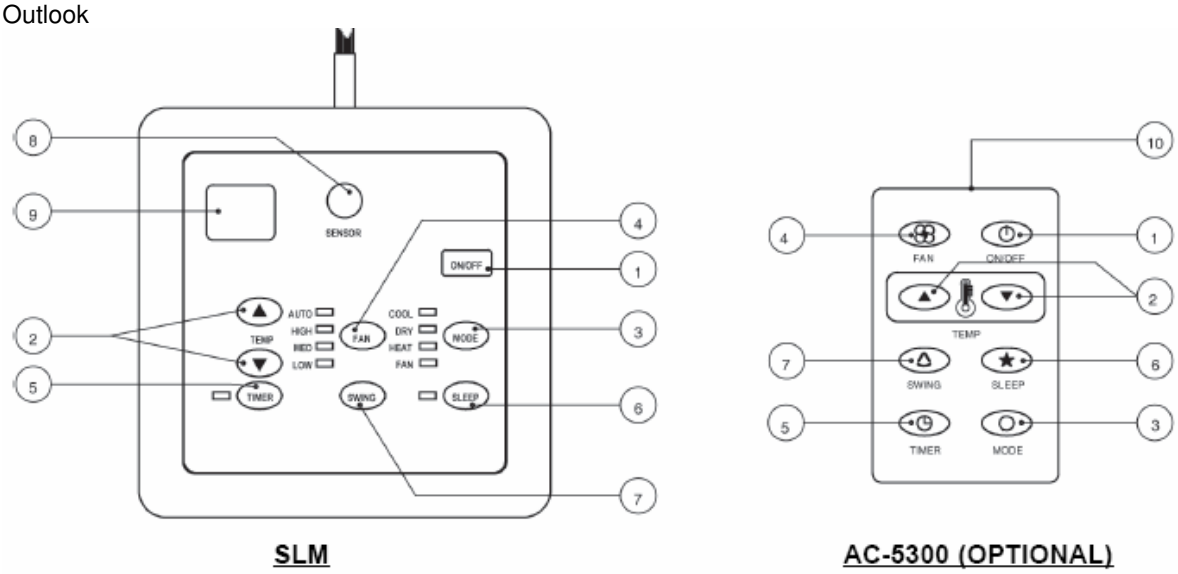
- To use OFF TIMER operation, press OFF button.
- HR. OFF is displayed on the LCD. Each pressing of OFF advances the time setting by 1 hour. The timer can be set between 1 to 9 hours.
- To cancel OFF TIMER operation, press CANCEL button. HR. OFF will disappear from the LCD.

13. CANCEL Button

- It cancels the timer setting.

5.6 SLM3

Outlook



SLM **AC-5300 (OPTIONAL)**

Operation Guide

1. "ON/OFF" Switch
   - Press to start the air conditioner unit.
   - Press again to stop the unit.

2. Temperature Setting
   - Set the desired room temperature.
   - Press button to increase or decrease the set temperature.
   - Setting range are between 16℃ to 30℃ (60℉ to 80℉).

3. Operation Modes
   - Press the "mode" button for select the type of operating mode.
     - Cooling Only:
       COOL, DRY, FAN
     - Heat Pump:
       AUTO, COOL, DRY, HEAT, FAN
       (AUTO mode is represented by both COOL and HEAT LED light on)

4. Fan Speed Selection
   - Press the button until the desired fan speed is achieved.

5. Timer
   - Press the set button to select the switch timer of the air conditioner unit (the setting range is between1 to 10 hours).

6. “SLEEP” Mode
    - Press button to activate the sleep function. This function can only be activated under “cool” or heating mode operation. When it is activated under “cool” mode operation, the set temperature will increase 0.5℃ after 30 minutes, 1℃ after 1 hour and 2℃ after 2 hours. If it is activated under “HEAT” mode operation, the set temperature will be decreased 0.5℃ after 30 minutes, 1℃ after 1 hour and 2℃ after 2 hours.

7. Air Swing
    - Press button to activate the automatic air swing function.

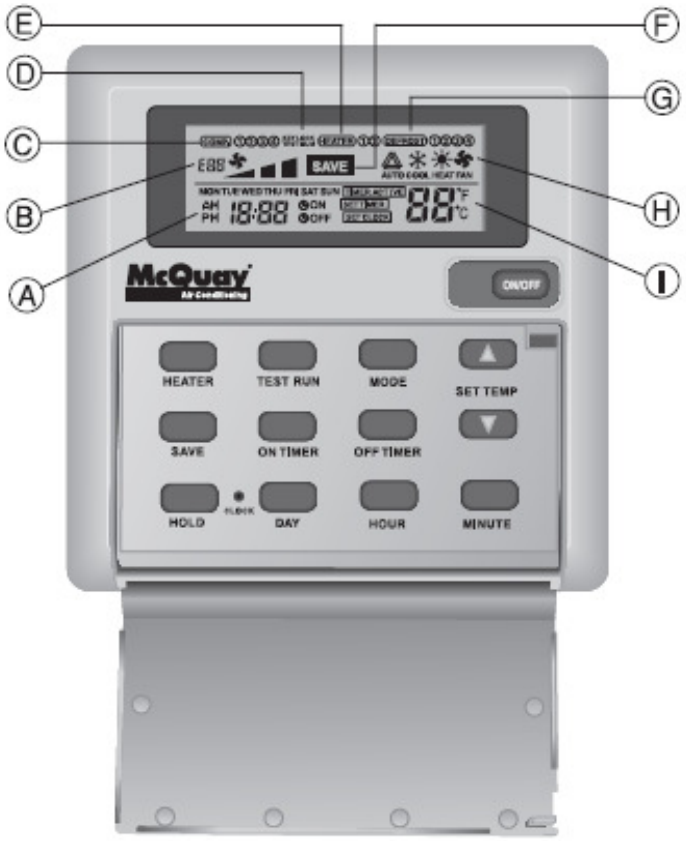
8. Sensor
    - Infra red sensor to receive signals from wireless controller.

9. LED Display
    - To display the set temperature (in ℃) and timer delay setting (in hours).

10. Transmission Source
    - To transmit signals to the air conditioner.

5.7 Sequential Controller

Outlook



A : Time display
B : Error indication
C : Compressor running display (up to 4 compressors)
D : Key lock display
E : Heat display (up to 2 heaters)
F : Energy saving mode display
G : Compressor deforst cycle display (up to 4 compressors)
H : Operation mode display
I : Temperature set display

Operating Guide

1. "ON/OFF" Switch
   - Press once to start the air conditioning unit.
   - Press again to stop the unit.
   - The operation lamp next to the key lights up and goes off respectively when the unit is running or not running.
   - *Caution:* In the case when the ***ON/OFF*** key is pressed immediately after the operation is stopped, the unit will not restart until 3 minutes later to protect the compressor.

2. Selecting Operating Mode
   - Press the ***MODE*** key to select the type of operating mode. Consecutive press of the key switches the operation over "*COOL*", "*HEAT*", "*AUTO*" and "*FAN*"

3. SAVE Mode
   - Press the ***SAVE*** key to select the energy saving function. This option is only available for "*COOL*", "*HEAT*" and "*AUTO*" modes.

4. Auxiliary Electric Heater
   - If the "*HEAT*" mode provides insufficient heating to a room even at the highest temperature setting (30℃), press the **HEATER** key to activate the auxiliary electric heater. For models with two heaters, consecutive press of the key allows the selection of one or both heaters active.

5. Temperature Setting
   - To set the desired room temperature, press ▲ or ▼ to increase or decrease the set temperature in the range of 16℃ to 30℃.
   - Press both ▲ and ▼ simultaneously to toggle between ℃ and ℉ setting.

6. Time Setting

   Real time clock
   - Press the ***CLOCK*** key once to activate set clock mode.
   - Press again to disable set clock mode.
   - Under set clock mode, the time of the present day can be set by pressing the respective ***MINUTE***, ***HOUR*** and ***DAY*** key.

   7 days timer
   - Press the ***ON TIMER*** key to activate autoON timer mode. Under this mode, press the respective ***MINUTE***, ***HOUR*** and ***DAY*** key to select the time of the week when the air-conditioning unit is to automatically start running. Press ***ON TIMER*** key again to save the setting.
   - Press the ***OFF TIMER*** key to activate autoOFF timer mode. Under this mode, press the respective ***MINUTE***, ***HOUR*** and ***DAY*** key to select the time of the week when the air-conditioning unit is to automatically stop running. Press the ***ON TIMER*** key again to save the setting.
   - Then to activate the 7 days timer, press and hold the ***TIMER ACTIVE*** key until the word "TIMER ACTIVE" appears on the LCD screen. Repeat the same step to disable the 7 days timer.

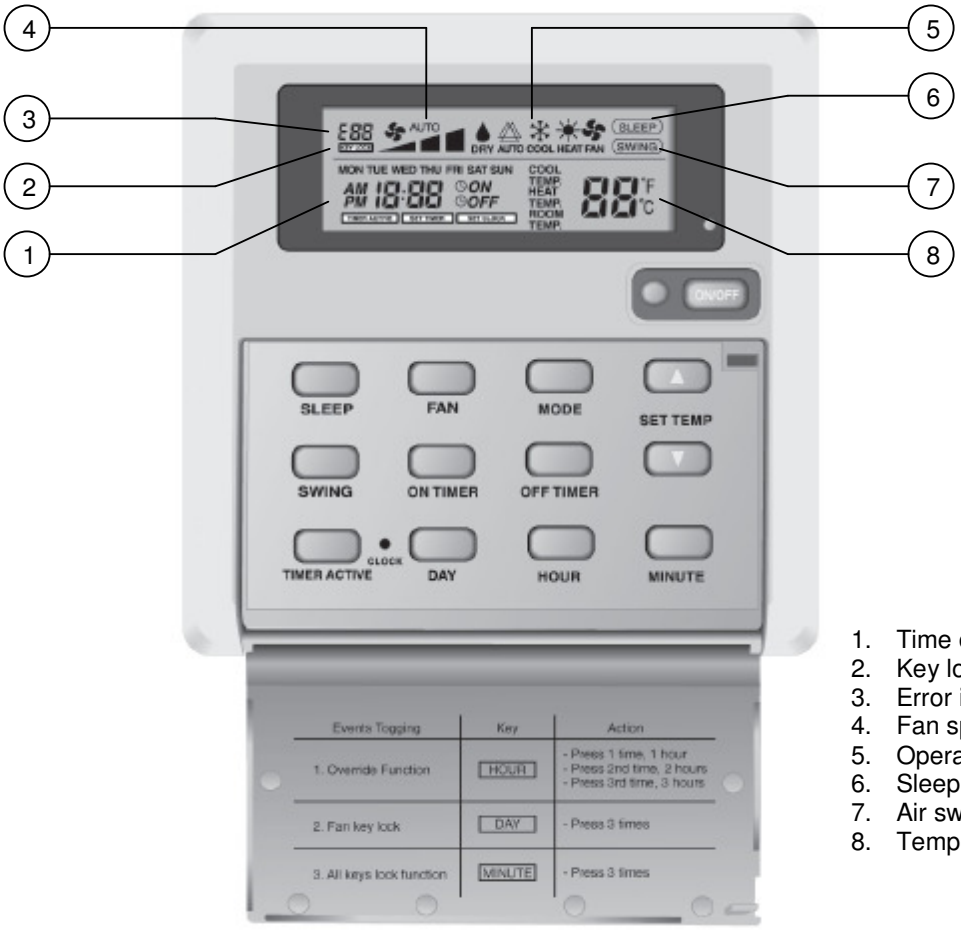
7. Other Function

   Key Lock
   - Press the ***MINUTE*** key 3 times consecutively to activate the key lock. A "KEY LOCK" symbol will appear on the LCD screen. At this point, only the ON/OFF key is valid.
   - To disable the key lock, again press the MINUTE key 3 times consecutively.

   Test Run
   - Press the ***TEST RUN*** key 2 times consecutively to test run the unit.

5.8 Netware 3

Outlook



1. Time display
2. Key lock display
3. Error indication
4. Fan speed display
5. Operation mode display
6. Sleep mode display
7. Air swing display
8. Temperature set display

Operating Guide

1. “ON/OFF” Switch
   - Press once to start the air conditioning unit.
   - Press again to stop the unit.
   - The operation lamp next to the key lights up and goes off respectively when the unit is running or not running.
   - *Caution:* In the case when the ***ON/OFF*** key is pressed immediately after the operation is stopped, the unit will not restart until 3 minutes later to protect the compressor.

2. Selecting Operating Mode
   - Press the ***MODE*** key to select the type of operating mode. Consecutive press of the key switches the operation over "*COOL*", "*HEAT*", "*AUTO*", "*DRY*" and "*FAN*"

3. Fan Speed Selection
   - Press the ***FAN*** key until the desired fan speed is achieved.

4. Sleep Mode Setting
   - Press the ***SLEEP*** key to activate sleep mode. This function is available under *COOL*, *HEAT* & *AUTO* mode.
   - When it is activated in *COOL* mode, the set temperature will be increased 0.5℃ after 30mins, 1℃ after 1 hour and 2℃ after 2 hours.
   - When it is activated in *HEAT* mode, the set temperature will be decreased 1℃ after 30mins, 2℃ after 1 hour and 3℃ after 2 hours.

5. Temperature Setting
   - To set the desired room temperature, press ▲ or ▼ to increase or decrease the set temperature in the range of 16℃ to 30℃.
   - Press both ▲ and ▼ simultaneously to toggle between ℃ and ℉ setting.

6. Air Swing
   - Press the ***SWING*** key to activate the automatic air swing function.

7. Time Setting

   Real time clock
   - Press the ***CLOCK*** key once to activate set clock mode.
   - Press again to disable set clock mode.
   - Under set clock mode, the time of the present day can be set by pressing the respective ***MINUTE***, ***HOUR*** and ***DAY*** key.

   7 days timer
   - Press the ***ON TIMER*** key to activate autoON timer mode. Under this mode, press the respective ***MINUTE***, ***HOUR*** and ***DAY*** key to select the time of the week when the air-conditioning unit is to automatically start running. Press ***ON TIMER*** key again to save the setting.
   - Press the ***OFF TIMER*** key to activate autoOFF timer mode. Under this mode, press the respective ***MINUTE***, ***HOUR*** and ***DAY*** key to select the time of the week when the air-conditioning unit is to automatically stop running. Press the ***ON TIMER*** key again to save the setting.
   - Then to activate the 7 days timer, press and hold the ***TIMER ACTIVE*** key until the word "TIMER ACTIVE" appears on the LCD screen. Repeat the same step to disable the 7 days timer.

8. Other Function

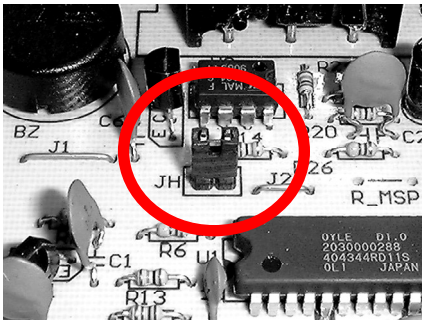
   Key Lock
   - Press the ***MINUTE*** key 3 times consecutively to activate the key lock. A "KEY LOCK" symbol will appear on the LCD screen. At this point, only the ON/OFF key is valid.
   - To disable the key lock, again press the MINUTE key 3 times consecutively.

6.0 Controller Configuration

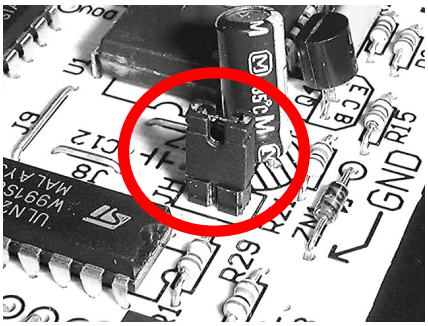
6.1 Auto Random Restart

- Shorted at JH/JP1/J_LST jumper at main board for auto restart (supplied).
- Remove the jumper to have non-auto restart.

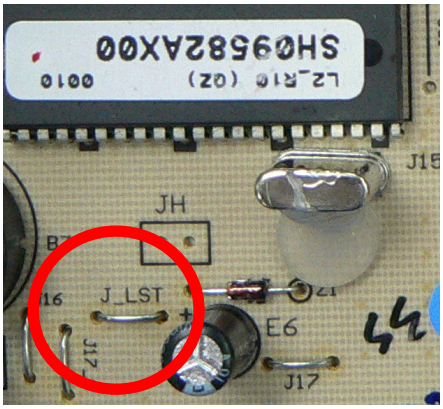
D2.0



U1.5 / SQ2.0



L2.2 / L208A / LWS / W2

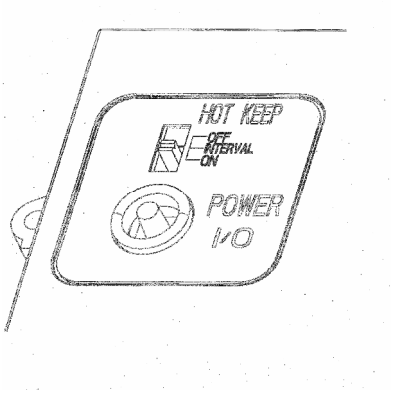


6.2 Hot Keep Selection

Three selections available:

a. Fan stop if indoor coil temperature < 30℃ (OFF).
b. Fan runs at low speed if indoor coil temperature < 30℃ and stop if indoor coil temperature < 18℃ (ON).
c. Cycle of low fan running for 30s and fan off for 120s and repeat (INTERVAL).

WM – F/FR (U1.5 & L2EF)
3 selections available at the slide switch on the On/Off Switch Board; Preset at OFF.



Other models (U1.5)
At CN3 location on the PCB,

i. Remove the connector to have (b) Fan ON and
ii. Cut off the big resistor (12kOhm) to have (c) Fan INTERVAL

Non-ducted Model – standard setting is (a) Fan OFF
Ducted Model – standard setting is (C) Fan INTERVAL

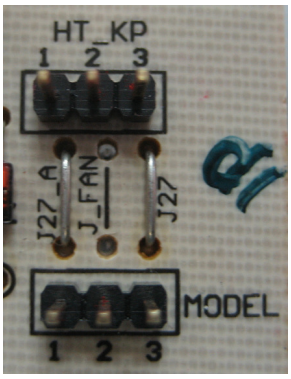
L2 Models

Two selections are available:
a. Fan ON:
- If the indoor coil temperature > 40℃, the indoor fan will run at speed.
- If the indoor coil temperature crosses 37℃, the indoor fan willrun at low speed.
- if the indoor coil temperature <18℃, the indoor fan will stop.

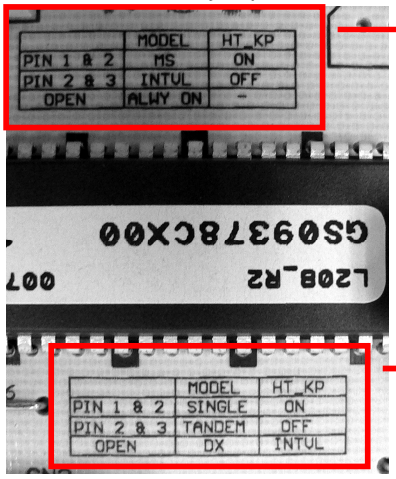
b. Fan OFF
- If the indoor coil temperature >40℃, the indoor fan will run at set speed.
- If the indoor coil temperature crosses 37℃, the indoor fan willrun at low speed.
- If indoor coil temperature <30℃, the indoor fan will stop.

L208A / LWS2.0 models

There are 2 tables setting for HT_KP & MODEL jumpers as shown as below.



HT_KP & MODEL Jumpers



For L208A jumper setting

	MODEL	HT_KP
Pin 1&2	MS	ON
Pin 2&3	INTVL	OFF
Open	ALWY ON	-

For LWS2.0 jumper setting

	MODEL	HT_KP
Pin 1&2	Single	ON
Pin 2&3	Tandem	OFF
Open	DX	INTVL

Software	Type	Jumper	Hotkeep Selection				
			Fan On	Fan Off	Interval	Always On	Multisplit
LWS2.0	Tandem WSHP	MODEL	Pin 2 & 3	Pin 2 & 3	Pin 2 & 3	X	X
		HT_KP	Pin 1 & 2	Pin 2 & 3	Open	X	X
	Single WSHP	MODEL	Pin 1 & 2	Pin 1 & 2	Pin 1 & 2	X	X
		HT_KP	Pin 1 & 2	Pin 2 & 3	Open	X	X
	DX	MODEL	Open	Open	Open	X	X
		HT_KP	Pin 1 & 2	Pin 2 & 3	Open	X	X
L208A	DX	MODEL	Open	Open	Pin 2 & 3	Open	Pin 1 & 2
		HT_KP	Pin 1 & 2	Pin 2 & 3	Open	Open	Open

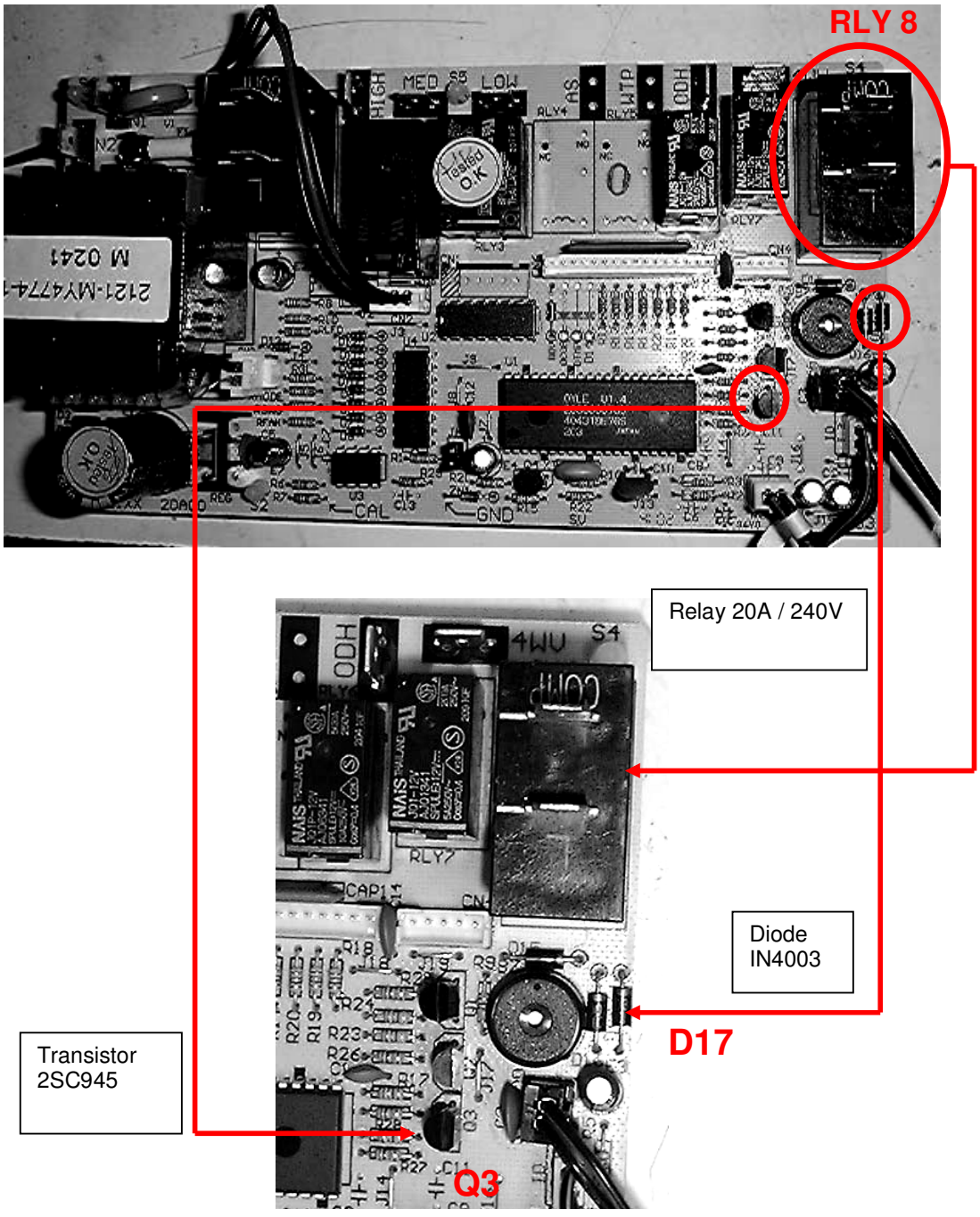
The above table is the summary of the jumpers setting for both LWS2.0 and L208A.
For example,
WSHP single compressor with Fan ON for hot keep selection:
Place the shunt jumpers on HT_KP (Pin 1 & 2) & MODEL (Pin 1& 2).

6.3 Auxiliary Heater Conversion

U1.5 Heatpump with Auxiliary Heater

To convert the standard U1.5 heatpump PCB to with auxiliary heater application, the following components need to be added onto the PCB.

1. Heater relay
2. Transistor
3. Diode

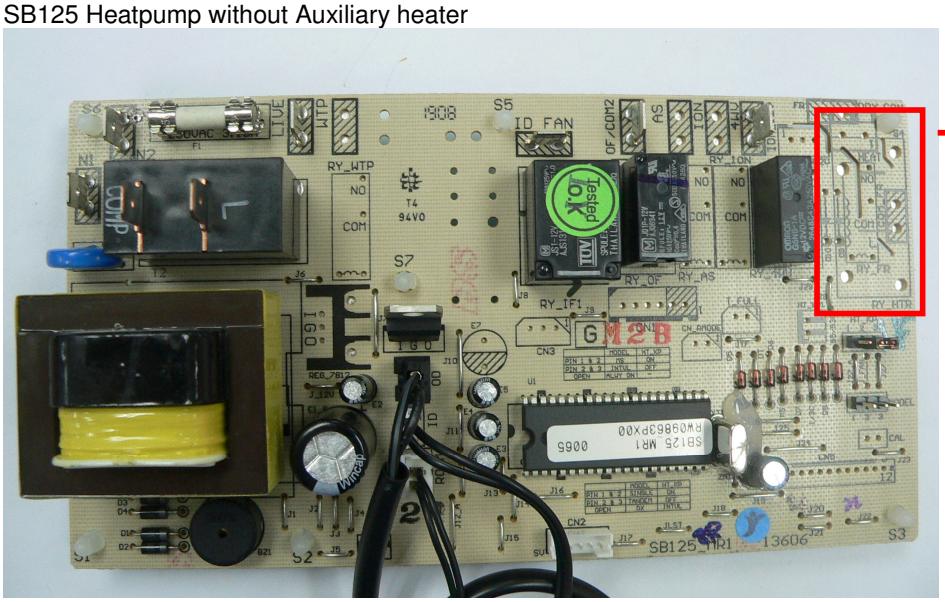


SB125 Heatpump with Auxiliary Heater

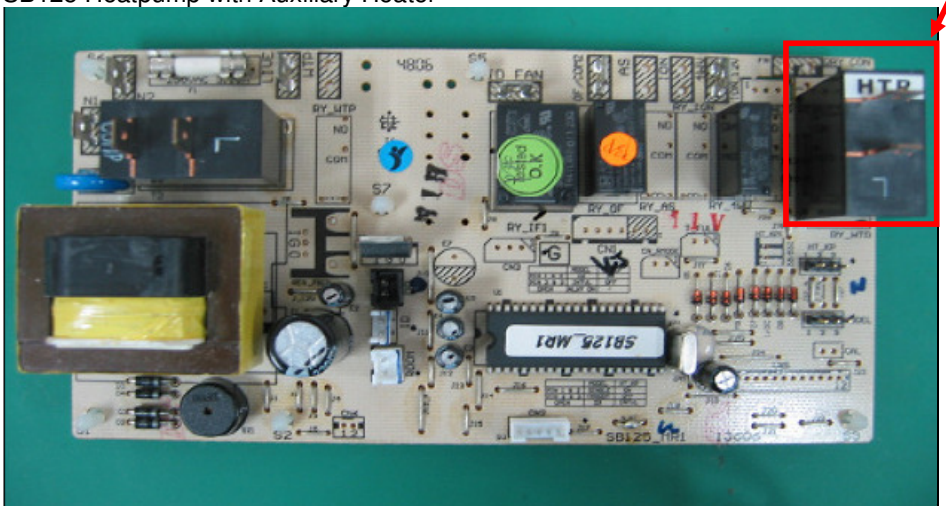
To convert SB125 heatpump PCB to auxiliary heater application, you need only one heater relay as shown below:

1. Place the JM relay on the RY_HTR location
2. Solder all the relay pins.

SB125 Heatpump without Auxiliary heater



SB125 Heatpump with Auxiliary Heater

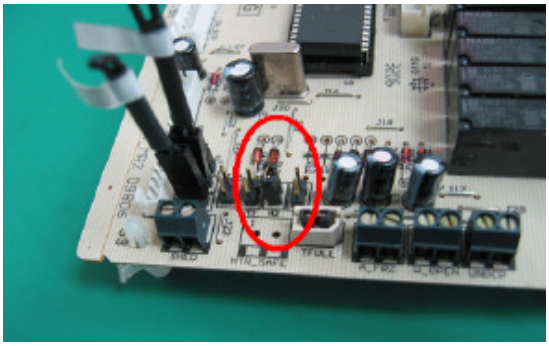


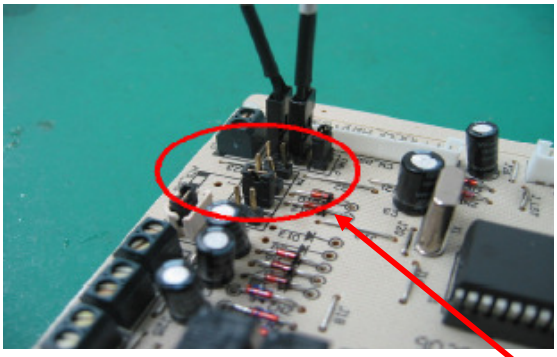
Relay
240V/ 20A

W2 Heatpump with Auxiliary heater

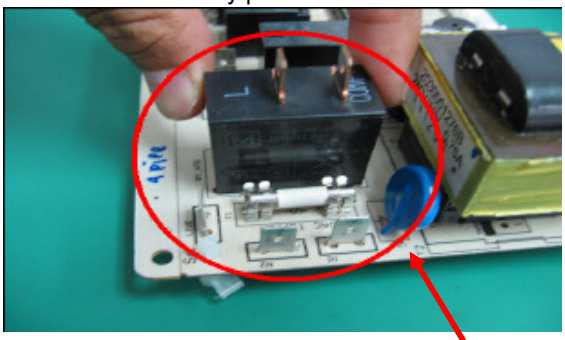
To convert SB125 heatpump PCB to auxiliary heater application, you need the following components to be added onto the PCB:
1. Shunt jumper
2. JM Relay 240VAC/ 20A

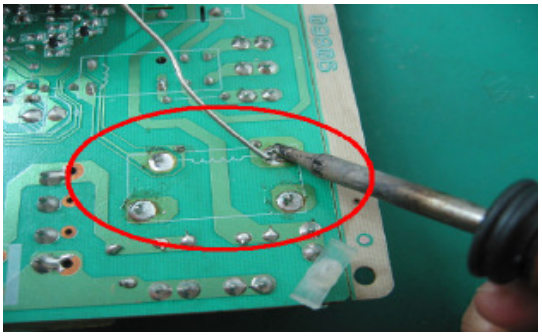
Step 1:-
Place the shunt jumper at jumper header M2.



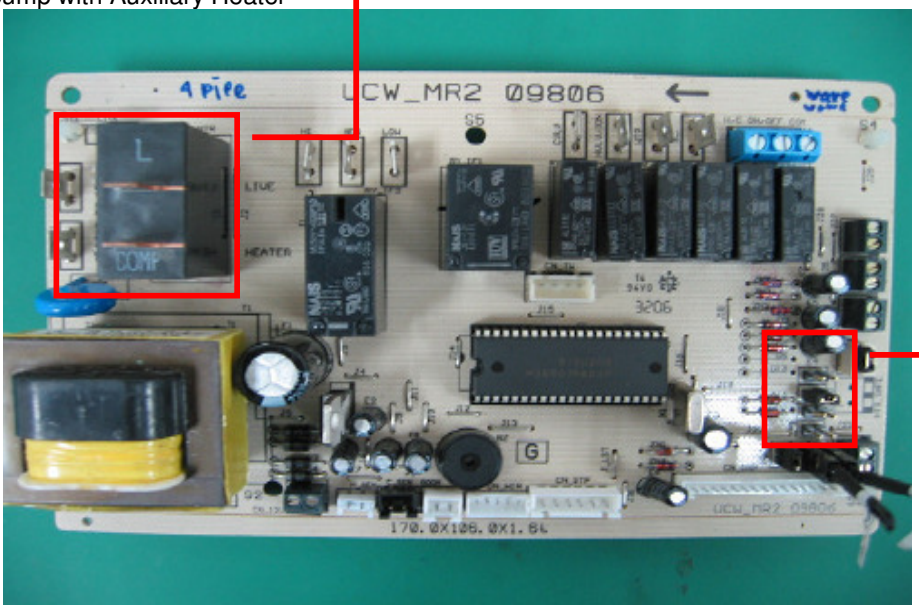


Step 2:-
1. Place the JM relay at RY_HTR location
2. Solder all the relay pins





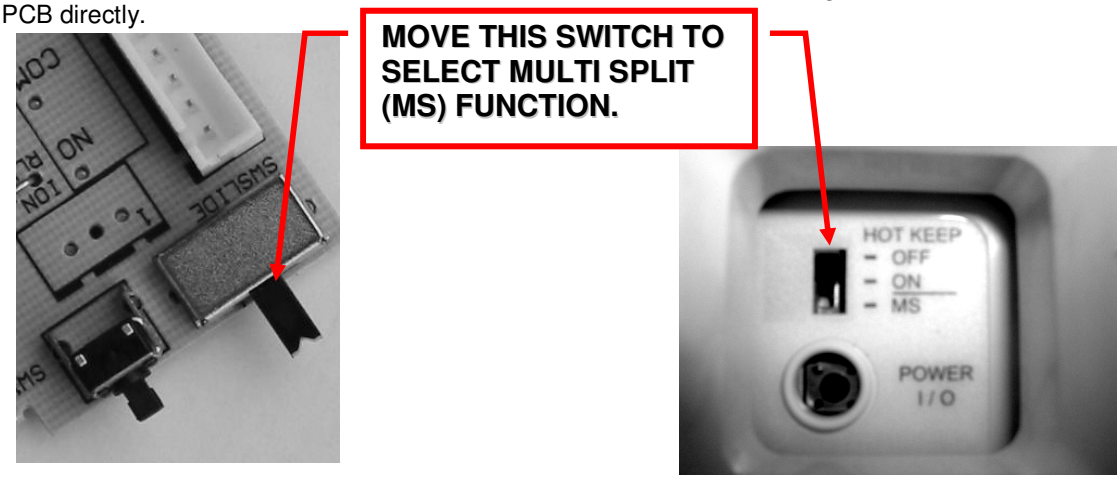
W2 Heatpump with Auxiliary Heater



6.4 Multi Split Conversion

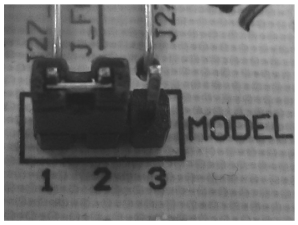
Cooling Only Model (L2.0 / L208A)
The cooling only model WM-G, CK-A/B/C/E, CE-E, CC-C which are using L2 control board can be switched to multi split units without any modification needed.

Heatpump Model (L2.0)
WM-GR
The Multi Split mode can be selected at the slide switch on the On/Off Switch Board; Preset at OFF. The outdoor coil sensor has to be removed from the PCB as the reading is taken from the outdoor PCB directly.



Heatpump Models (L208A)
CK-AR/BR/CR/ER, CE-ER, CC-CR (L208A)

The multisplit can be selected by using shunt jumper and short jumper header MODEL_KP between pin 1 & 2 as the picture shown below. The outdoor coil sensor has to be removed from the PCB as the reading is taken from the outdoor PCB directly.



6.5 Sequential Controller

It is allowed to configure the controller to suit individual's need with details below:

1. Models
For each type, there are 3 models for the control to configure into.

	Dip switch 1	Dip switch 2	Dip switch 5
a. Cooling (SQCn)	Off	Off	Off
b. Heatpump + no heater (SQHn0)	On	Off	Off
c. Heatpump + 1 heater (SQHn1)	Off	On	Off
d. Heatpump + 2 heater (SQHn2)	On	On	Off
e. Auto heatpump + no heater (SQHn0)	On	Off	On
f. Auto heatpump + 1 heater (SQHn1)	Off	On	On
g. Auto heatpump + 2 heater (SQHn2)	On	On	On

n denotes number of compressor(s)
where the postfix number indicates number of compressor(s).

2. Stage Differential Temperature
Differential temperature is the temperature difference between turning on or off 1 compressor to another compressor in thermostat cycle.
The stage differential temperature can be selected from the range shown below:

	Dip switch 3	Dip switch 4
a. Default	Off	Off
b. 0.5℃	On	Off
c. 1.0℃	Off	On
d. 1.5℃	On	On

Note that 1.5℃ only valid for 2 and 3 compressors model. For 4 compressors model, maximum allowed is 1.0℃.

The default differential temperature is base on number of compressor model, the setting is as below:

Model	Diff. Temperature
1 compressor	Not. Applicable
2 compressors	0.5℃
3 compressors	1.0℃
4 compressors	1.5℃

3. Hot Keep Option

	Dip switch 6
a. Fan off	Off
b. Fan on	On

45. Operating Modes
The system has 4 operating modes to select with respect to each model selection:

Model	Auto	Cool	Heat	Fan	
SQCn	-	X	-	X	
SQHnh	-	X	X	X	(Dip switch 5 = off)
SQHnh	X	X	X	X	(Dip switch 5 = on)

Where x denotes modes available
n = number of compressor(s)
h = number of heater(s)

5. Last Memory Functions
The power up settings for either with or without the last memory backup is based on the J_LST setting.

	J_LST Setting
a. Last memory backup	J_LST Plugged
b. Without last memory backup	J_LST Removed

6. Summary of Models available

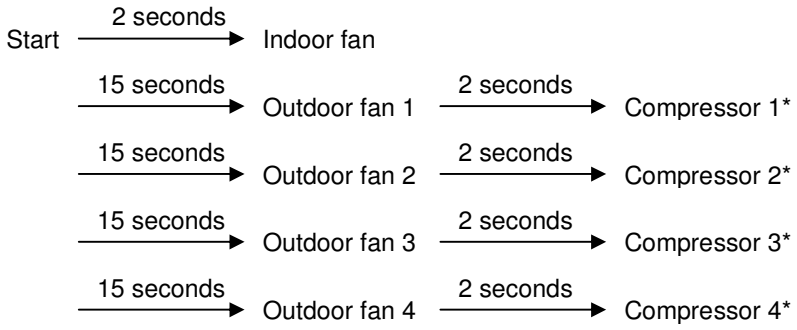
SQCn Cooling Only model
SQHnh Heatpump model

n = number of compressors: 2, 3, 4
h = number of heaters: 0, 1, 2

Factory preset (default setting)

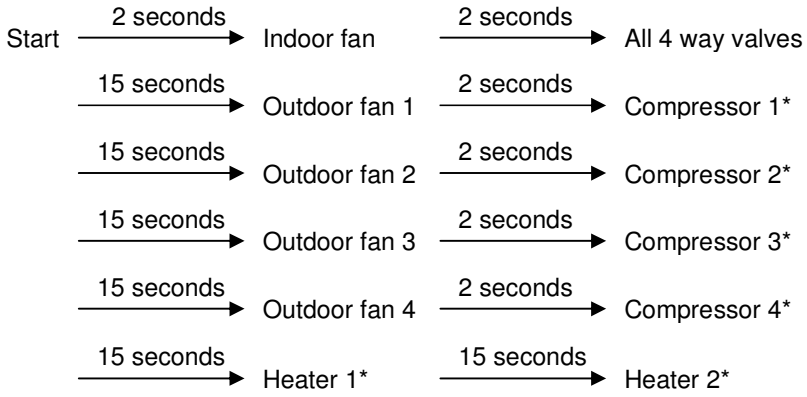
Model	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
SQCn	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SQHnh	ON	ON	OFF	OFF	ON	ON	OFF	ON

7. Sequential Control for Cool Mode ask Tan CS
The starting sequence for indoor fan, outdoor fan and compressors is shown as below:



*If available and applicable
The compressors will be turned on one by one depending on the on/off conditions shown in the above.

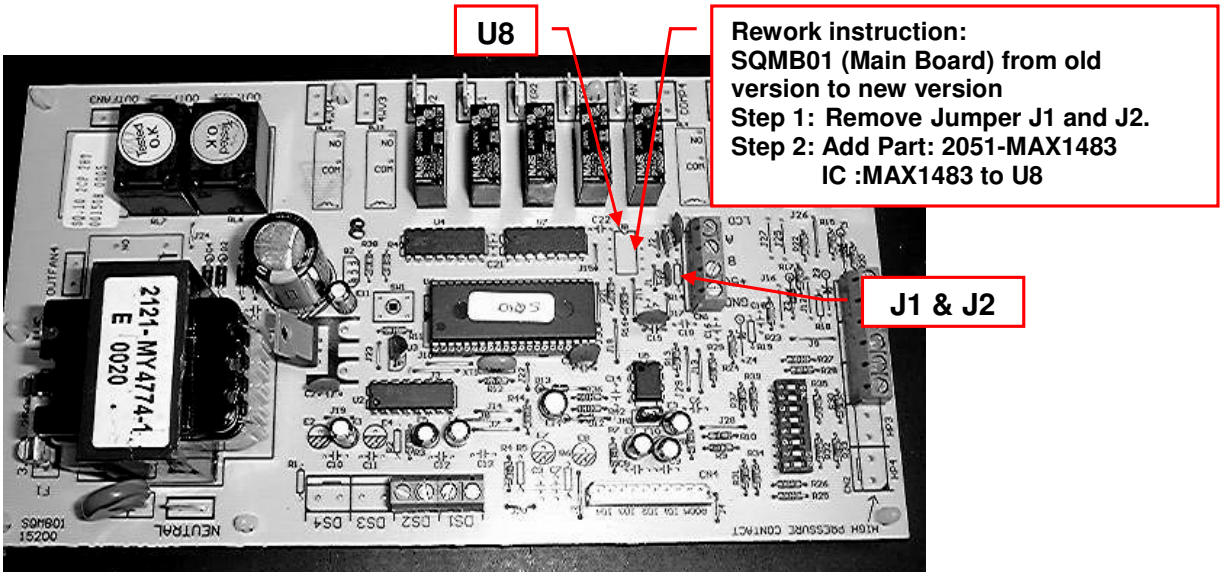
8. Sequential Control for Heat Mode
The starting sequence for indoor fan, outdoor fan and compressors is shown as below:



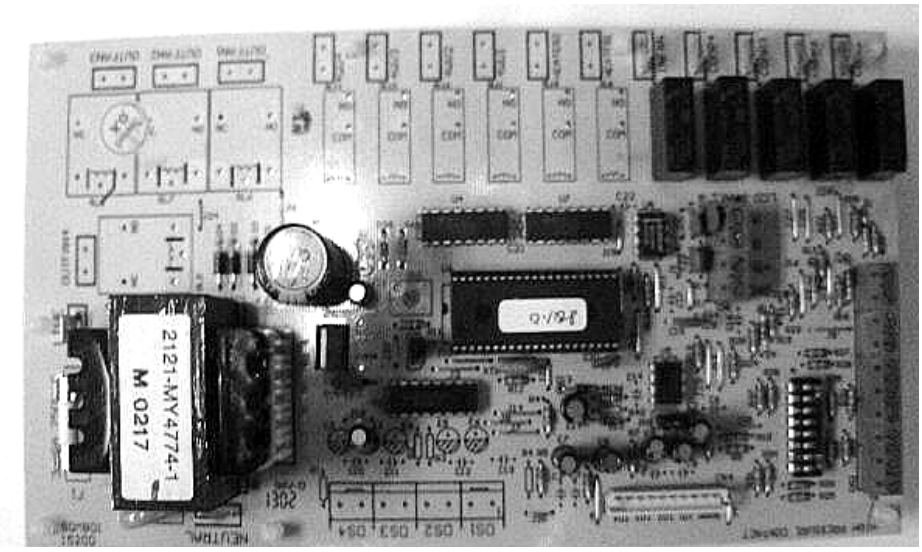
*If available and applicable
The compressors will be turned on one by one depending on the on/off conditions shown in the above.

9. Conversion from Old Sequential Board to New Sequential Board
(For wiring up to 1000 meters)

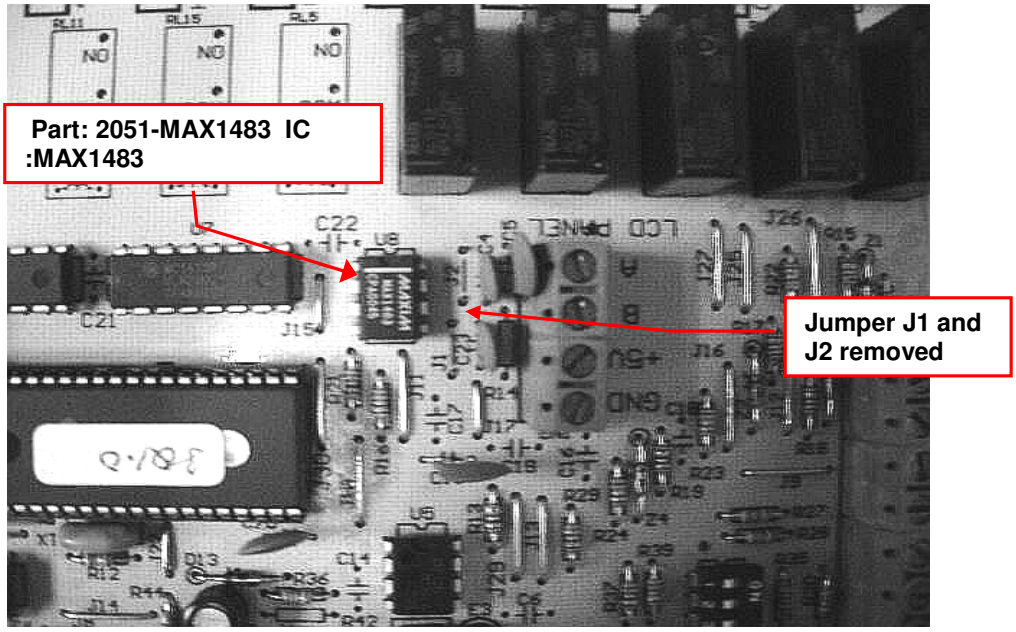
9.1 Sequential Main Board SQMB01 (Old Version)


U8
Rework instruction:
SQMB01 (Main Board) from old version to new version
Step 1: Remove Jumper J1 and J2.
Step 2: Add Part: 2051-MAX1483
IC :MAX1483 to U8
J1 & J2

9.2 Sequential Main Board SQMB01 (New Version)

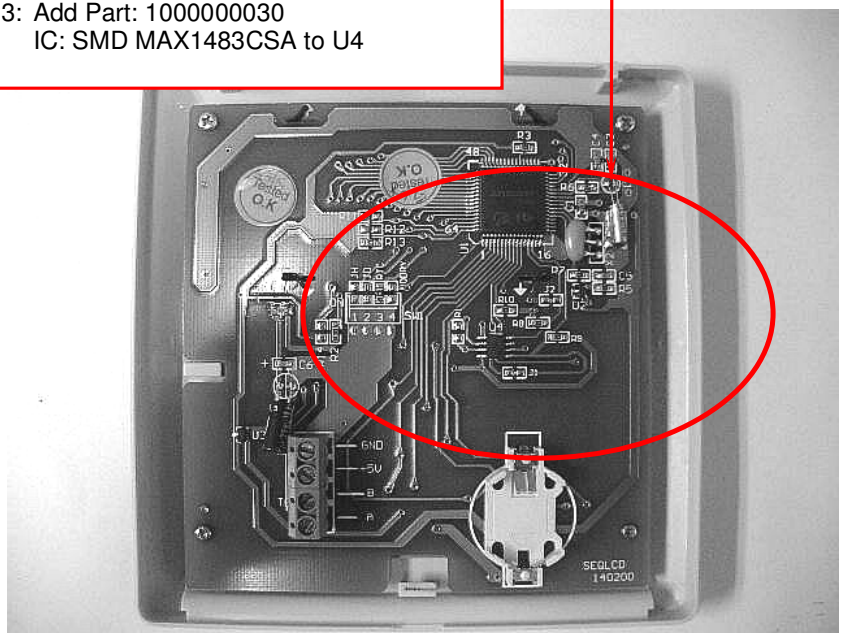


9.3 Sequential Main Board SQMB01 (New Version)



9.4 Sequential LCD Panel SQ-LCD (New Version)

SQLCD (LCD Panel) from old to new
Step 1: Remove Jumper: J1, J2
Step 2: Add Chip Resistor. 1/10W 5% 200K to R8, R9, R10
Step 3: Add Part: 1000000030
IC: SMD MAX1483CSA to U4



6.6 Chilled Water Fan Coil Unit (W1V3)

The standard W1V3 board comes with a VALVE jumper. The system can be configured as the jumper selection listed below:

	VALVE jumper	HEAT jumper
Heatpump Mode & Valve Application	√	√
Heatpump Mode & Valveless Application	X	√
Cooling Mode & Valve Application	√	X
Cooling Mode & Valveless Application	X	X

√ : Jumper Remained X : Jumper Removed

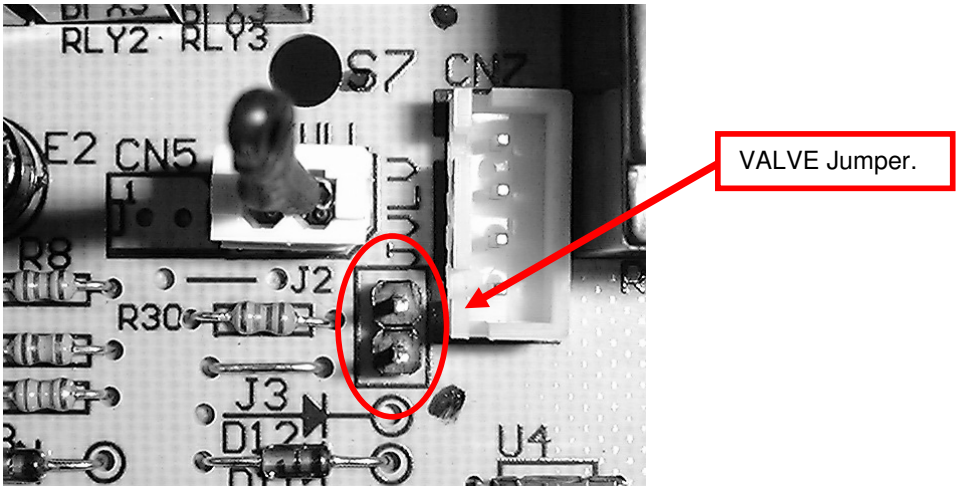
VALVE & HEAT Jumper Location

Model: WM 05-25FW

1. VALVE jumper is plugged into JVLV connector on the emergency switchboard.
2. HEAT jumper is plugged into JMODE connector on the emergency switchboard.

Model: CK 20-50AW, CK 15-25BW, CK 10-20CW, CE 20-50DW and CC 10-60CW

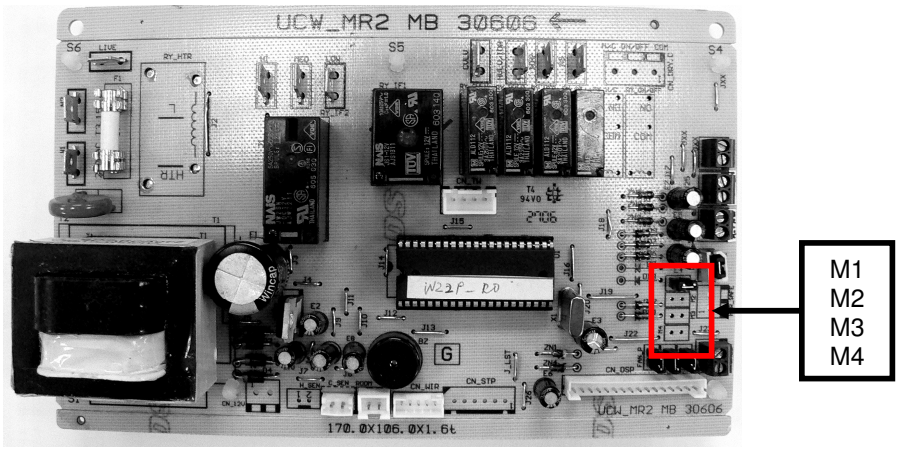
1. VALVE jumper is plugged into JVLV connector on the main board.
2. HEAT jumper is plugged into the OD connector on the main board.



6.7 Chilled Water Fan Coil Unit (W2.0)

The system model can be configured via the following jumpers. For each model selected, the permissible operating modes are as follows:

Jumper	Configuration	Model	Operating Modes
M1	2 Pipes without Aux. Heater	1	Heat>Cool>Dry>Fan
M2	2 Pipes with Aux. Heater	2	Heat>Cool>Dry>Fan
M3	4 Pipes + Boiler	3	Heat>Cool>Dry>Auto>Fan
M4	4 Pipes + Boiler	4	Heat>Cool>Dry>Fan



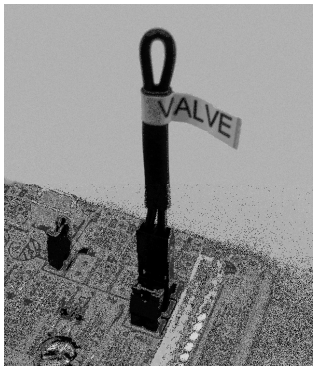
The standard W2 board comes with a VALVE jumper. The system can be configured as the jumper selection listed below:

	VALVE jumper	HEAT jumper
Heatpump Mode & Valve Application	√	√
Heatpump Mode & Valveless Application	X	√
Cooling Mode & Valve Application	√	X
Cooling Mode & Valveless Application	X	X

√ : Jumper Remained X : Jumper Removed

VALVE & HEAT Jumper Location

1. VALVE jumper is plugged into JVLV connector on the emergency switchboard.
2. HEAT jumper is plugged into JMODE connector on the emergency switchboard.



6.8 U1.5 → L208A Conversion

All single split indoor units with U1.5 PCB cannot be directly by the new L208A PCB because of the following:-

MCK/A5CK-A/AR & MCK/A5CK-C/CR

U1.5PCB - The connector on the PCB (CN6) for the inter-connector cable has 16 pins.
L208A PCB - The connector on the PCB (CN5 & CN6) for the inter-connector cable have 12 & 2 pins.

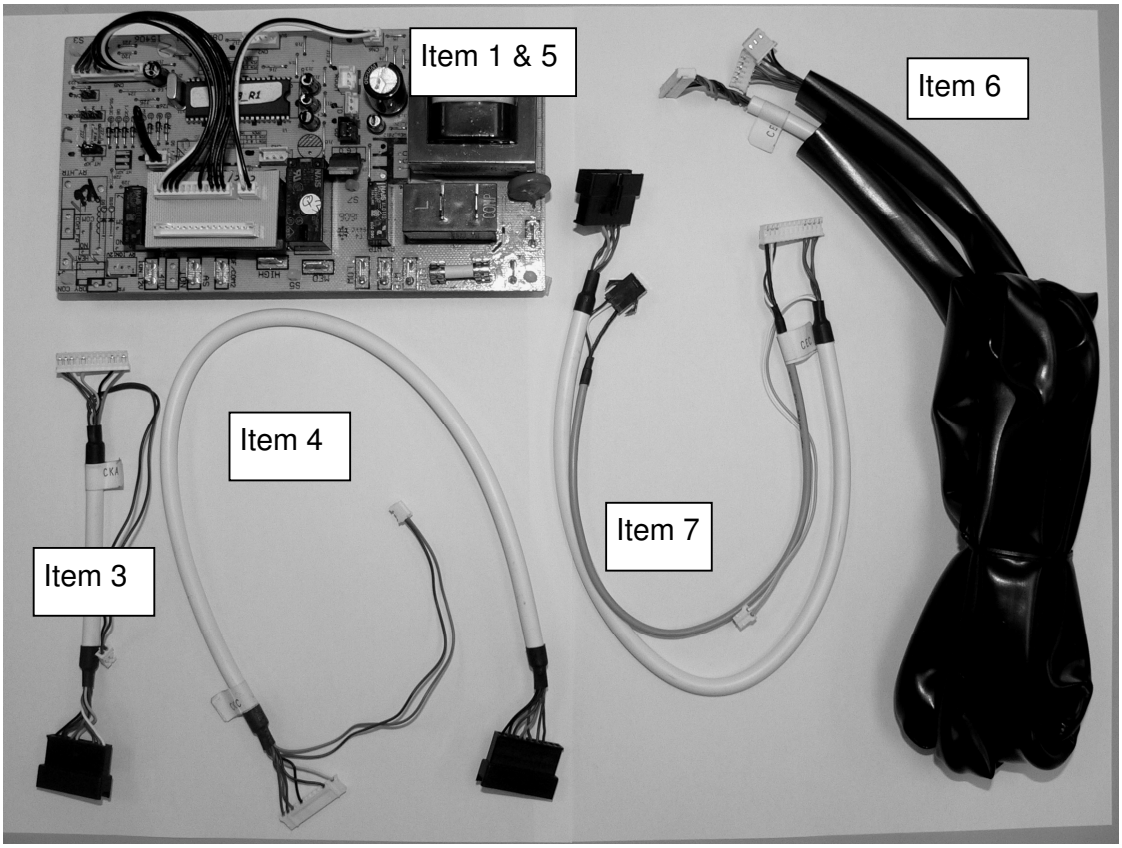
MCM/A5CM-D/DR & MCM/A5CM 062C/CR

U1.5 PCB - The connector on the PCB (CN6) for the assy. LED cable has 16 pins
L2 08A PCB - The connector on the PCB (CN5) for the assy. LED cable has 12 pins.

L2 Spare parts can be ordered via e-Distributors website under Spare Parts Ordering. The part number is PI-C-00094.

The L2 Spare Parts Package contains the following items:-
1. L2 08A Heat Pump PCB.
2. Room sensor, indoor coil sensor inter-connector wire, outdoor coil sensor inter-connector wire.
3. Inter-connector cable from main board to MCK-A/AR panel.
4. Inter-connector cable from main board to MCK-C/CR panel.
5. Intermediate board with 2 sets of cables, which is stick on the main board.
6. Inter-connector cable from main board to MCM-D/DR assy. LED board.
7. Inter-connector cable from main board to MCM 062C/CR assy. LED board.

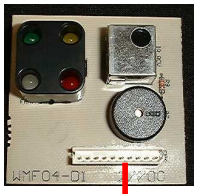
Remarks
The intermediate board with 2 sets of cables, which is stick on the L208A PCB (Item 1 & 5) is ONLY applicable for ACM/A5CM-D/DR and ACM 062C/CR models with originally using U1.5 PCB.

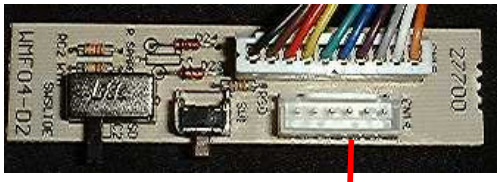


6.9 WMF U1.4 to L2EF Conversion

1. The U1.4 PCB can be replaced directly by the new L2EF PCB because no modification needs to be done and the connector pins for both stepper motor and fan motor is still the same as U1.4.
3. However, the display panel (IR receiver) and On/Off switch board pins on PCB for both U1.4 and L2EF is not compatible with each other; therefore it is unable to change only the display panel or On/Off switch board from U1.4 to L2EF or L2EF to U1.4.
5. For example, if the display panel for U1.4 is malfunction, it cannot be replaced by the display panel from L2EF as the connector pins is already different.
   Please refer to the following pictures for a clear description of connector pins.

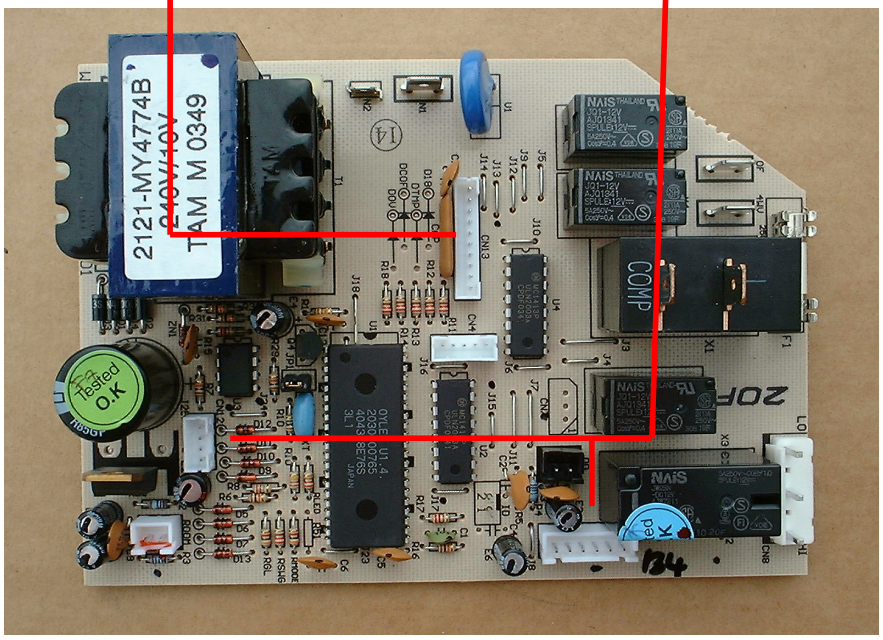
Display Panel



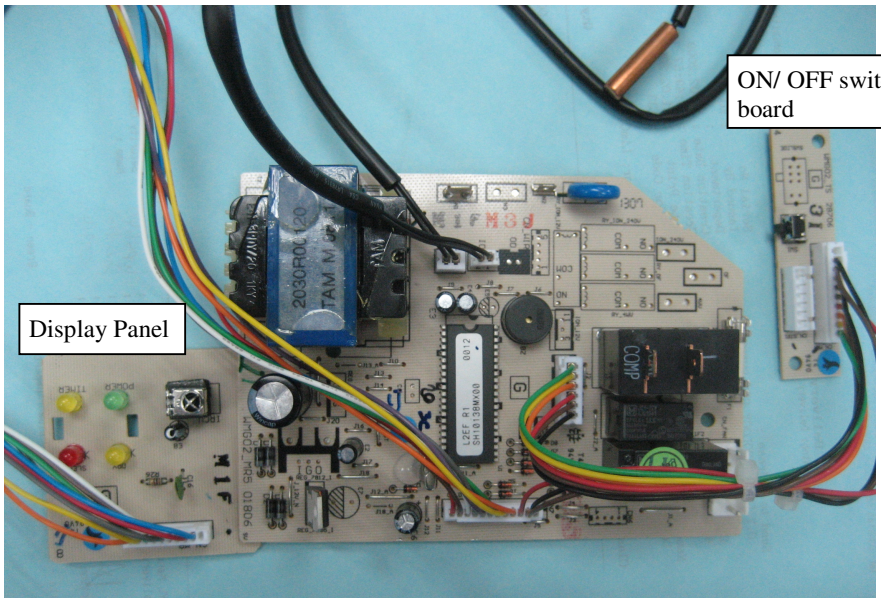


ON/ OFF switch board

U1.4 PCB



L2EF PCB
comes with display panel and ON/OFF switch board



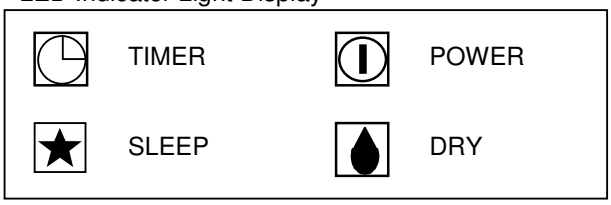
7.0 Service Diagnosis

7.1 Self Diagnosis Table

Wall Mounted F Series Cooling Only Model

Model	Board	Handset
WM 010/015/020/025F, 311	D2.0	G7

LED Indicator Light Display



LED Light Diagnosis Table

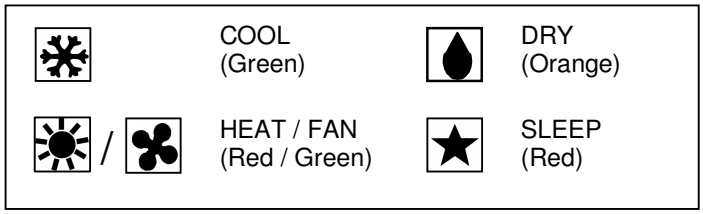
				Operation / Faulty Indication
○ / ●		○		Timer On
○	○			Sleep mode On
○			○	Dry mode
◉ Continuously			○ / ●	Defrost mode
◉ Once every 2 sec				Room air sensor contact loose / short
◉◉ Twice every 2 sec				Indoor coil sensor contact loose / short
◉◉◉ 3 times every 2 sec				Gas leak

○ ON ○ / ● ON or OFF ◉ BLINKING

Wall Mounted F Series Heat Pump Model

Model	Board	Handset
WM 010/015/020/025FR, 301R	U1.5	G7

LED Indicator Light Display



LED Light Diagnosis Table

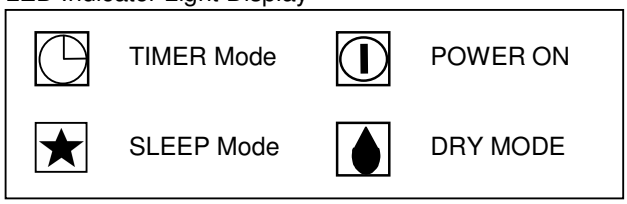
					Operation / Faulty Indication
○				○ / ●	Cooling mode
	○				Dry mode
		○			Fan mode
			○	○ / ●	Heating mode
◉			○	○ / ●	Auto mode in heating operation
○			◉	○ / ●	Auto mode in cooling operation
			◉		Defrost mode
◉					Compressor overload protection
				◉	Indoor coil sensor contact loose / short
	◉				Outdoor coil sensor contact loose / short
		◉			Room air sensor contact loose / short
◉	◉				Gas leak

○ ON ○ / ● ON or OFF ◉ BLINKING

Wall Mounted F Series Cooling Only Model

Model	Board	Handset
WM 007/010/015/020/025F	L2EF	G7

LED Indicator Light Display



LED Indication Lights: Normal Operation and Faulty Indication Table

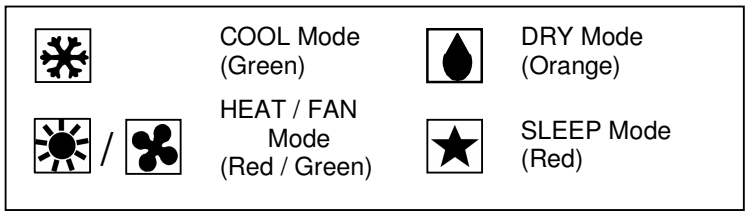
				Operation / Faulty Indication
○		○		Timer On
○	○			Sleep mode On
○			○	Dry mode
◉ Continuously			○ / ●	Frost Prevention Mode
◉ Once every 2 sec				Room air sensor contact loose / short
◉◉ Twice every 2 sec				Indoor coil sensor contact loose / short
◉◉◉ 3 times every 2 sec				Outdoor abnormal operation

○ ON ○ / ● ON or OFF ◉ BLINKING

Wall Mounted F Series Heatpump Model

Model	Board	Handset
WM 007/010/015/020/025FR, 311/301R	L2EF	G7

LED Indicator Light Display



The heat pump unit is equipped with “auto mode”, whereby the unit will provide reasonable room temperature by switching the unit automatically to either “cool” mode or “heat” mode, according to the temperature setting set by the user,

LED Indicator Lights: Normal Operation and Faulty Indication Table

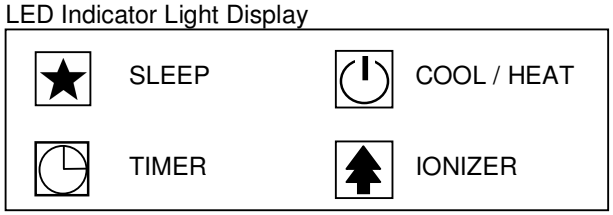
					Operation / Faulty Indication
○				○ / ●	Cooling mode
	○				Dry mode
		○			Fan mode
			○	○ / ●	Heating mode
◉			○	○ / ●	Auto mode in heating operation
○			◉	○ / ●	Auto mode in cooling operation
			◉		Defrost mode
◉					Compressor overload protection
				◉	Indoor coil sensor contact loose / short
	◉				Outdoor coil sensor contact loose / short
		◉			Room air sensor contact loose / short
◉	◉	If the system is in auto or sleep mode, switch to heat or cool mode and turn OFF the sleep function, turn OFF the power supply to reset the system, wait for 3 minutes and ON the system again.			
◉	◉	If the system is in cool or heat mode (with the sleep function OFF), the sensor may have contact problem, compressor overload protection trip or gas leak.			

○ ON ○ / ● ON or OFF ◉ BLINKING

Wall Mounted G Series Model

Model	Board	Handset
WM 010/015/20/025G/GR	L2.2	G17 / SLM3 / Netware 3

LED Indicator Light Display



LED Light Diagnosis Table

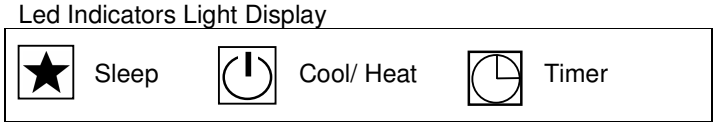
	COOL/HEAT (GREEN/RED)			Operation / Faulty Indication
○ / ●	○ Green		○ / ●	Cooling mode
○ / ●	○ Red		○ / ●	Heating mode
○ / ●	○ Red		○ / ●	Auto mode in heating operation
○ / ●	○ Green		○ / ●	Auto mode in cooling operation
	○	○		Timer On
○	○			Sleep mode On
	○		○	Ionizer On
	○		○ / ●	Fan mode On
	○		○ / ●	Dry mode On
	◉ 1 time			Room air sensor contact loose / short
	◉ 3 times			Outdoor coil sensor contact open
◉	◉ 2 times			Indoor coil sensor contact open
		◉ 1 time		Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
	◉ Red			Defrost mode
		◉ 3 times		Gas leak
		◉ 6 times		Hardware error (tact switch pin short)

○ ON ○ / ● ON or OFF ◉ BLINKING

Wall Mounted J Series Model

Model	Board	Handset
WM 009/015J/JR	L2GSN	G17

Led Indicators Light Display



LED Indoor lights: Normal Operation and Fault Conditions for Cooling/ Heat Pump Unit

	(GREEN/RED)		Error Code	Operation / Faulty Indication
○ / ●	○ Green		-	Cooling mode
○ / ●	○ Red		-	Heating mode
○ / ●	○ Red		-	Auto mode in heating operation
○ / ●	○ Green		-	Auto mode in cooling operation
	○	○	-	Timer On
○	○		-	Sleep mode On
	○		-	Fan mode On
	○		-	Dry mode On
	◉ 1 time		Blink E1	Room air sensor contact loose / short
	◉ 3 times		Blink E3	Outdoor coil sensor contact open
	◉ 2 times		Blink E2	Indoor coil sensor contact open
		◉ 1 time	Blink E4	Compressor overload / Indoor coil sensor short / Outdoor coil sensor short
	◉ Red		-	Defrost operation
		◉ 3 times	Blink E5	Gas leak
		◉ 6 times	Blink E8	Hardware error (tact switch pin short)
●	◉ 4 times		Blink E9	No Feedback from indoor fan
	◉ 5 times		Blink EE	EEPROM defrost

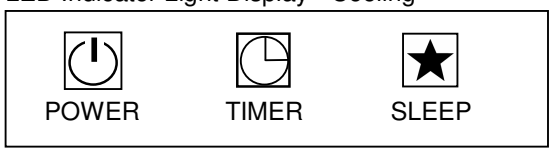
● ON ○ / ● ON/ OFF ◉ Blinking

Note: The unit will not detect sensor missing when the compressor is ON.

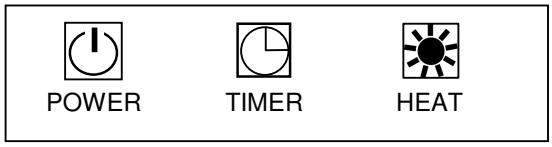
Ceiling Cassette A / B / C Series Model

Model	Board	Handset
CK 020/025/030/040/050A/AR	U1.5	G7 / SLM3 / Netware 3
CK 015/020/025B/BR	U1.5	G7 / SLM3 / Netware 3
CK 010/015/020C/CR	U1.5	G7 / SLM3 / Netware 3

LED Indicator Light Display - Cooling



LED Indicator Light Display – Heating



LED Light Diagnostic Table

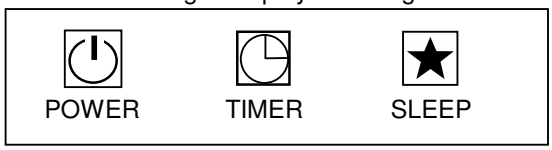
				Operation / Faulty Indication
○				Cooling mode
○	○			Timer On
○		○		Sleep mode On
○			○	Heating mode
◉ Continuously			○ / ●	Frost prevention mode
◉ Once every 3 sec				Compressor overload protection
◉◉ Twice every 3 sec				Pump fault
◉◉◉ 3 times every 3 sec				Gas leak
◉◉◉◉ 4 times every 3 sec				Room / indoor / outdoor coil sensor contact loose / short

○ ON ○ / ● ON or OFF ◉ BLINKING

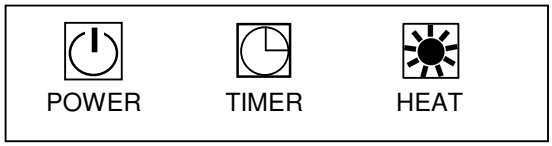
Ceiling Cassette A / B / C/ E Series Model

Model	Board	Handset
CK 020/025/030/040/050A/AR	L208A	G17 / SLM3 / Netware 3
CK 015/020/025B/BR	L208A	G17 / SLM3 / Netware 3
CK 010/015/020C/CR	L208A	G17 / SLM3 / Netware 3
CK 020/025/028/040/050E/ER	L208A	G17

LED Indicator Light Display - Cooling



LED Indicator Light Display – Heating



LED Light Diagnostic Table

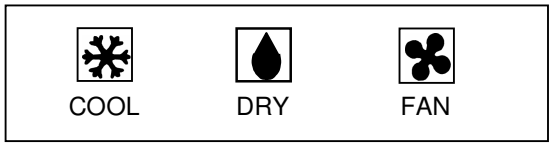
				Operation / Faulty Indication
○				Cooling mode
○	○			Timer On
○		○		Sleep mode On
○			○	Heating mode
○			◉	Auto mode in cooling operation
○			○	Auto mode in heating operation
	◉ 1 time			Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
	◉ 2 times			Pump fault
	◉ 3 times			Gas leak
◉ 1 time				Room air sensor contact loose / short
◉ 2 times				Indoor coil sensor contact open
◉ 3 times				Outdoor coil sensor contact open

○ ON ○ / ● ON or OFF ◉ BLINKING

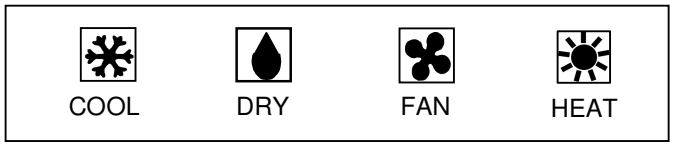
Ceiling Exposed D Series Model

Model	Board	Handset
CE 020/025/030/040/050D/DR	U1.5	G8 / SLM3 / Netware 3

LED Indicator Light Display - Cooling



LED Indicator Light Display – Heating



LED Light Diagnostic Table

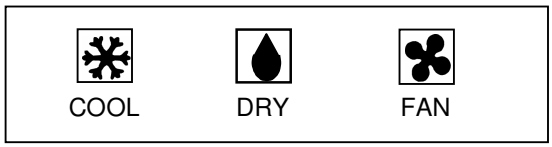
				Operation / Faulty Indication
○				Cooling mode
	○			Dry mode
		○		Fan mode
			○	Heating mode
○			◉	Auto mode in cooling operation
◉			○	Auto mode in heating operation
			◉	Defrost mode
◉				Compressor overload protection
◉	◉			Gas leak
	◉			Outdoor coil sensor contact open / short
	◉	◉		Indoor coil sensor contact open / short
		◉		Room air sensor contact loose / short

○ ON ○ / ● ON or OFF ◉ BLINKING

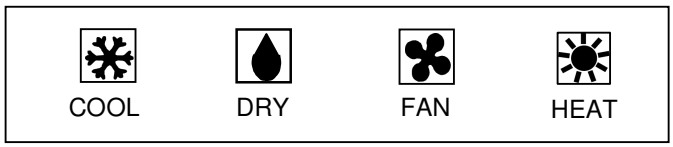
Ceiling Exposed D / E Series Model

Model	Board	Handset
CE 020/025/0300/400/50D/DR	L208A	G18 / SLM3 / Netware 3
CE 015/020/0250/28E/ER	L208A	G18 / SLM3 / Netware 3

LED Indicator Light Display - Cooling



LED Indicator Light Display – Heating



LED Light Diagnostic Table

				Operation / Faulty Indication
○				Cooling mode
	○			Dry mode
		○		Fan mode
			○	Heating mode
○			◉	Auto mode in cooling operation
◉			○	Auto mode in heating operation
◉				Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
◉	◉			Gas leak
	◉			Outdoor coil sensor contact open
	◉	◉		Indoor coil sensor contact open
		◉		Room air sensor contact loose / short

○ ON ○ / ● ON or OFF ◉ BLINKING

Seven Segment Display – SLM3 / Netware 3

Model	Board	Handset
WM 010/015/020/025FR, 301R	U1.5	SLM3 / Netware 3
CK 020 - 050A/AR	U1.5	SLM3 / Netware 3
CK 015 - 025B/BR	U1.5	SLM3 / Netware 3
CK 010 - 020C/CR	U1.5	SLM3 / Netware 3
CE 020 - 050D/DR	U1.5	SLM3 / Netware 3
CC 010 - 060C/CR	U1.5	SLM3 / Netware 3

Cooling / Heat pump Model

Seven Segments	Faulty Indication
E1 blinking	Room air sensor contact loose / short
E2 blinking	Indoor coil sensor contact loose / short
E3 blinking	Outdoor coil sensor contact loose / short
E4 blinking	Compressor overload protection
E5 blinking	Gas leak
E6 blinking	Pump fault*
HEAT LED blinking	Defrost mode (SLM3 only)

*Applicable for Ceiling Cassette Model only.

Model	Board	Handset
WM 010/015/020/025G/GR	L2.0	SLM3 / Netware 3
CK 020 - 050A/AR	L208A	SLM3 / Netware 3
CK 015 - 025B/BR	L208A	SLM3 / Netware 3
CK 010 - 020C/CR	L208A	SLM3 / Netware 3
CE 020 - 050D/DR	L208A	SLM3 / Netware 3
CE 015 - 028E/ER	L208A	SLM3 / Netware 3
CC 010 - 060C/CR	L208A	SLM3 / Netware 3
CC 030 - 100D/DR	L208A	SLM3 / Netware 3

Cooling / Heat pump Model

Seven Segments	Faulty Indication
E1 blinking	Room air sensor contact loose / short
E2 blinking	Indoor coil sensor contact open
E3 blinking	Outdoor coil sensor contact open
E4 blinking	Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
E5 blinking	Gas leak
E6 blinking	Water Pump fault*
E7 blinking	Outdoor coil sensor exist (Multi-split model)
E8 blinking	Hardware error (tact switch pin short)
LO	Room temperature below 8ºC(46 ºF)
HI	Room temperature above 37ºC(99 ºF)
OP	Working room sensor is open
SH	Working room sensor is short

*Applicable for Ceiling Cassette Model only.

Ducted Blower B/C/D/ER Series Model – Single Compressor
Rooftop Packaged Air Conditioner – Single Compressor

Model	Board	Handset
SB 075 – 100B/BR	L208A	SLM3
SB 075 – 100D	L208A	SLM3
SB 075 – 100ER	L208A	SLM3
SB 125 – 150B/BR	U1SB125	SLM3
SB 125CR	U1SB125	SLM3
SB 125 – 150D	U1SB125	SLM3
SB 125 – 150ER	U1SB125	SLM3
RT 055 – 120A/AR	U1SB125	SLM3

Seven Segment Display – SLM3

Seven Segments	Faulty Indication
E1 blinking	Room air sensor contact loose / short
E2 blinking	Indoor coil sensor contact open
E3 blinking	Outdoor coil sensor contact open
E4 blinking	Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
E5 blinking	Gas leak

Model	Board	Handset
SB 075 – 100B/BR	L208A	SLM3
SB 075 – 100D	L208A	SLM3
SB 075 – 100ER	L208A	SLM3
SB 125 – 150B/BR	SB125	SLM3
SB 125CR	SB125	SLM3
SB 125 – 150D	SB125	SLM3
SB 125 – 150ER	SB125	SLM3
RT 55 – 120A/AR	SB125	SLM3

Seven Segment Display – SLM3

Seven Segments	Faulty Indication
E1 blinking	Room air sensor contact loose / short
E2 blinking	Indoor coil sensor contact open
E3 blinking	Outdoor coil sensor contact open
E4 blinking	Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
E5 blinking	Gas leak

Ducted Blower B/D/ER Series Model – Multi Compressors
Rooftop Packaged Air Conditioner – Multi Compressors

Model	Board	Handset
SB 150B2/BR2 – 600B4/BR4	SQ2.0	SQ-LCD
SB 125D2 – 500D4	SQ2.0	SQ-LCD
SB 125ER2 – 600ER4	SQ2.0	SQ-LCD
RT 150 – 420A/AR	SQ2.0	SQ-LCD

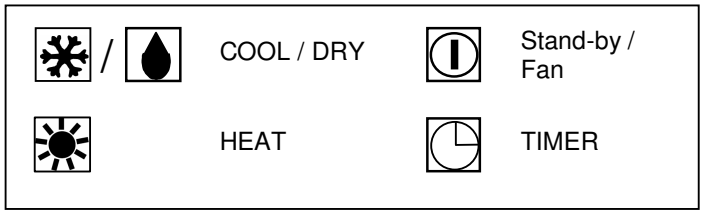
Error Code
When the system is on and an error occurs, the ON/OFF LED on the LCD panel will blink and an error code is shown. When the system is off and there is a thermistor error, the ON/OFF LED is off but the error code is still displayed. Each error code represents different message as below:

Error Code	Faulty Indication	Error Code	Faulty Indication
E01	Require manual reset (possible causes)	E19	Indoor coil sensor 4 short
E02	Compressor 1 high temperature (overload)	E20	Indoor coil sensor 1 open
E03	Compressor 2 high temperature (overload)	E21	Indoor coil sensor 2 open
E04	Compressor 3 high temperature (overload)	E22	Indoor coil sensor 3 open
E05	Compressor 4 high temperature (overload)	E23	Indoor coil sensor 4 open
E06	Compressor 1 high pressure trip / contact open	E24	Outdoor coil sensor 1 short
E07	Compressor 2 high pressure trip / contact open	E25	Outdoor coil sensor 2 short
E08	Compressor 3 high pressure trip / contact open	E26	Outdoor coil sensor 3 short
E09	Compressor 4 high pressure trip / contact open	E27	Outdoor coil sensor 4 short
E10	Compressor 1 trip / low refrigerant / outdoor abnormal	E28	Outdoor coil sensor 1 open
E11	Compressor 2 trip / low refrigerant / outdoor abnormal	E29	Outdoor coil sensor 2 open
E12	Compressor 3 trip / low refrigerant / outdoor abnormal	E30	Outdoor coil sensor 3 open
E13	Compressor 4 trip / low refrigerant / outdoor abnormal	E31	Outdoor coil sensor 4 open
E14	Room sensor short	E32	Compressor 1 de-ice
E15	Room sensor open	E33	Compressor 2 de-ice
E16	Indoor coil sensor 1 short	E34	Compressor 3 de-ice
E17	Indoor coil sensor 2 short	E35	Compressor 4 de-ice
E18	Indoor coil sensor 3 short		

Wall Mounted F Series Inverter-X Model

Model	Board	Handset
WMX 010/015FR	VA2.0	G17

LED Indicator Light Display



LED Light Diagnosis Table

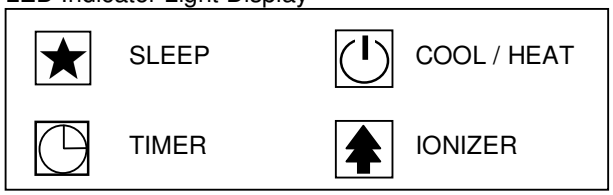
				Operation / Faulty Indication
○			○ / ●	Cooling mode
○			○ / ●	Dry mode
		○		Stand-by / Fan mode
	○		○ / ●	Heating mode
○	○		○ / ●	Auto mode
	◉			Defrost mode
◉				Compressor overload protection
			◉	Indoor temperature sensors contact loose / short
		◉		Outdoor temperature sensor contact loose / short
◉		◉		Gas leak / compressor overheat
◉			◉	Communication error between indoor and outdoor
		◉	◉	Inverter error / PFC error
	◉	◉		Outdoor total current trip / DC peak
◉	◉			Indoor fan feedback error

○ ON ○ / ● ON or OFF ◉ BLINKING

Wall Mounted G Series Inverter-X Model

Model	Board	Handset
WMX 010/015/020/025G/GR	VA2.0	G17

LED Indicator Light Display



LED Light Diagnosis Table

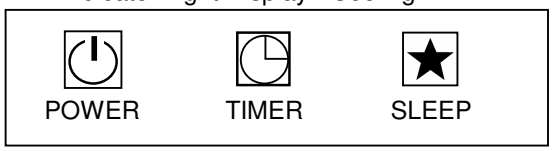
★	COOL/HEAT (GREEN/RED)	◔	⇑	Operation / Faulty Indication
○ /●	○ Green		○ /●	Cooling mode
○ /●	○ Red		○ /●	Heating mode/ Standby mode (only for heat pump model)
○ /●	○ Orange		○ /●	Auto mode in operation
	○	○		Timer On
○	○			Sleep mode On
	○		○	Ionizer On
	○		○ /●	Fan mode On
	○		○ /●	Dry mode On
	◉ Red			Defrost mode
	◉ Green			Indoor temperature sensor loose / short
		◉		Coil temperature sensor loose / short
			◉	Outdoor temperature sensor loose / short
◉	◉ Green			Compressor overload protection
	◉ Green		◉	IPM / PFC error
		◉	◉	Outdoor total current trip / DC peak
◉			◉	Compressor overheat / gas leak
	◉ Green	◉		Indoor fan feedback error
◉		◉		Communication error between indoor and outdoor

○ ON ○ /● ON or OFF ◉ BLINKING

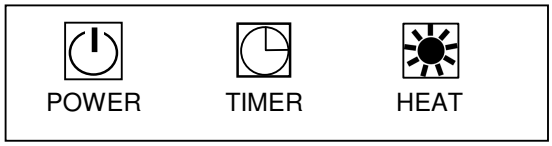
Ceiling Cassette A/C Series Inverter-X Model

Model	Board	Handset
CKX 020/025A/AR	VA3.0	G17
CKX 010/015/020C/CR	VA3.0	G17

LED Indicator Light Display - Cooling



LED Indicator Light Display – Heating



LED Light Diagnostic Table

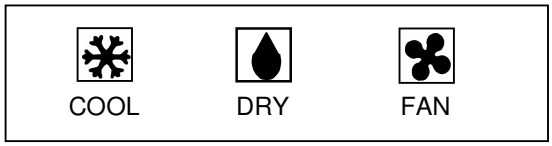
				Operation / Faulty Indication
○				Cooling mode
○	○			Timer On
○		○		Sleep mode On
○			○	Heating mode
			◉	Defrost mode
◉ 1 time				Indoor temperature sensor loose / short
◉ 2 times				Outdoor temperature sensor loose / short
◉ 3 times				Communication error
◉ 4 times	◉			Compressor overload protection
◉ 5 times				Pump fault
◉ 6 times				Compressor overheat / gas leak
	◉			Outdoor over current
◉	◉			IPM / PFC / Partial switching

○ ON ○ / ● ON or OFF ◉ BLINKING

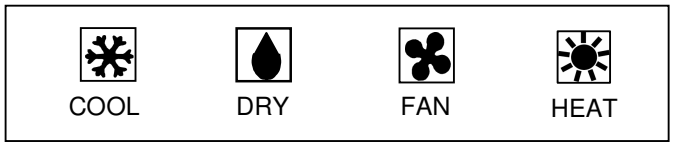
Ceiling Convertible E Series Inverter-X Model

Model	Board	Handset
CEX 015/020/025E/ER	VA3.0	G17

LED Indicator Light Display - Cooling



LED Indicator Light Display – Heating



LED Light Diagnostic Table

				Operation / Faulty Indication
○				Cooling mode
	○			Dry mode
		○		Fan mode
			○	Heating mode
			◉	Defrost mode
◉ 1 time				Indoor temperature sensor loose / short
◉ 2 times				Outdoor temperature sensor loose / short
◉ 3 times				Communication error
◉ 4 times				Compressor overload protection
◉ 5 times				Pump fault
◉ 6 times				Compressor overheat / gas leak
	◉			Outdoor over current
◉		◉		IPM / PFC / Partial switching

○ ON ○ / ● ON or OFF ◉ BLINKING

Seven Segment Display

Model	Board	Handset
WMX 010 – 025G/GR	VA3.0	SLM3
CKX 020 – 025A/AR	VA3.0	SLM3
CKX 010 – 020C/CR	VA3.0	SLM3
CEX 015 – 025E/ER	VA3.0	SLM3
CCX 010 – 025C/CR	VA3.0	SLM3

Cooling / Heat pump Model

Seven Segments	Faulty Indication
E1 blinking	Indoor temperature sensor loose / short
E2 blinking	Outdoor temperature sensor loose / short
E3 blinking	Communication error
E4 blinking	Compressor overload protection
E5 blinking	Pump fault
E6 blinking	Compressor overheat / gas leak
E7 blinking	IPM / PFC / Partial switching
E8 blinking	Outdoor over current
E9 blinking	Indoor fan feedback error

Inverter - X Outdoor Unit

Model	Board
SLX 010/105/020/025C/CR	VB2.0
MSV 025/035A	VB2.0
MSX 020/025/030A/AR	VB2.0

Normal running / compressor running RED LED blinking

No. of Blinks	Blinking Indication
1	Normal running, with no limitation
2	Voltage limit
3	Cooling unit: outdoor coil temperature limit Heating unit: indoor coil temperature limit
4	Total current limit
5	Discharge temperature limit
6	Cooling unit: indoor coil temperature limit
7	Indoor fan control
8	Outdoor frequency adjustment

Compressor stopped Error Indication

No. of Blinks		Faulty Indication	No. of Blinks		Faulty Indication
Red	Yellow		Red	Yellow	
0	1	Outdoor ambient sensor error	1	5	DC fan motor feedback error
0	2	Outdoor coil sensor error	1	6	AC peak current error
0	3	Outdoor discharge sensor error / compressor overheat	1	7	Outdoor suction sensor error
0	4	DC compressor feedback error	1	8	None
0	5	Communication error	1	9	DC compressor speed control error
0	6	Over current error	2	0	None
0	7	No load	2	1	Outdoor suction pipe A sensor error
0	8	Over / under voltage	2	2	Outdoor suction pipe B sensor error
0	9	DC compressor start failure	2	3	Outdoor suction pipe C sensor error
1	0	Cooling overload	2	4	Outdoor suction pipe D sensor error
1	1	Defrost	3	1	Communication error with indoor A
1	2	IPM protection	3	2	Communication error with indoor B
1	3	Read EEPROM error	3	3	Communication error with indoor C
1	4	Write EEPROM error	3	4	Communication error with indoor D

Chilled Water Fan Coil Unit

Model	Board	Handset
WM 005 – 025FW, 301W	W1V3	G7 / SLM3 / Netware 3
CK 020 – 050AW/AWH	W1V3	G7 / SLM3 / Netware 3
CK 015 – 025BW	W1V3	G7 / SLM3 / Netware 3
CK 010 – 020CW	W1V3	G7 / SLM3 / Netware 3
CE 020 – 050DW/CBW	W1V3	G7 / SLM3 / Netware 3
CC 010 – 060CW	W1V3	SLM3 / Netware 3
SB 075 – 150BW	N/A	No Controller

Self Diagnostic Table – W1V3

Fault Indication	POWER LED / COOL LED	Other LEDs	Seven Segments
Room sensor missing	Blinks 4 times	FAN blinks	E1 blinking
Indoor coil sensor missing	Blinks 4 times	SLEEP blinks	E2 blinking
Pump fault	Blinks 2 times	COOL & FAN blink	E6 blinking
Pipe water temperature poor	Blinks 3 times	COOL & DRY blink	E4 blinking
Pipe water temperature fault	Blink 1 time	COOL blinks	E5 blinking

Model	Board	Handset
WM 007 – 025GW	W2	G17 / SLM3 / Netware 3
WM 301W	W2	G17 / SLM3 / Netware 3
CK 020 – 050AW/AWH	W2	G17 / SLM3 / Netware 3
CK 015 – 025BW	W2	G17 / SLM3 / Netware 3
CK 010 – 020CW	W2	G17 / SLM3 / Netware 3
CE 007 – 015CBW	W2	G17 / SLM3 / Netware 3
CE 020 – 050DW	W2	G17 / SLM3 / Netware 3
CE 015 – 025EW	W2	G17 / SLM3 / Netware 3
CC 010 – 060CW	W2	SLM3 / Netware 3
SB 075 – 150BW	N/A	No Controller

Self Diagnostic Table – W2

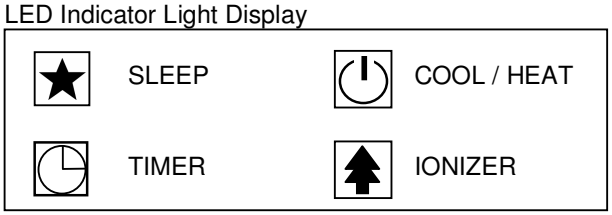
Fault Indication	COOOL LED	Seven Segments
Room sensor error (short/open)	Blink 1 time	E1
Pipe water sensor error (short/open)	Blink 2 times	E2
Water pump error	Blink 6 times	E6
Pipe water temperature fault	Blink 5 times	E5
Window open activated*	Blink 3 times	-
Antifreeze mode activated*	Blink 7 times	-
Load shedding activated*	Blink 8 times	-

*Applicable for 4 pipes applications only.

Wall Mounted G Series Model – Water Source Split Unit

Model	Board	Handset
5WMWS 010/015/020/025GR	LWS2.0	G17 / SLM3 / Netware 3

LED Indicator Light Display



LED Light Diagnosis Table

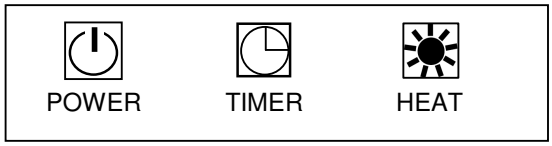
	COOL/HEAT (GREEN/RED)			Operation / Faulty Indication
○ / ●	○ Green		○ / ●	Cooling mode
○ / ●	○ Red		○ / ●	Heating mode
○ / ●	○ Red		○ / ●	Auto mode in heating operation
○ / ●	○ Green		○ / ●	Auto mode in cooling operation
	○	○		Timer On
○	○			Sleep mode On
	○		○	Ionizer On
		◉		Room air sensor contact loose / short Outdoor coil sensor contact loose / short
◉		◉		Indoor coil sensor contact open
	◉	◉		Compressor overload protection Gas leak
	◉ Red			Defrost mode

○ ON ○ / ● ON or OFF ◉ BLINKING

Ceiling Cassette A / B / C Series Model – Water Source Split Unit

Model	Board	Handset
5CKWS 020/025/030/040/050AR	LWS2.0	G17 / SLM3 / Netware 3
5CKWS 010/015/020CR	LWS2.0	G17 / SLM3 / Netware 3

LED Indicator Light Display – Heating



LED Light Diagnostic Table

			Operation / Faulty Indication
○			Cooling mode
○	○		Timer On
○		○	Heating mode
○		◉	Auto mode in cooling operation
○		○	Auto mode in heating operation
	◉ 1 time		Compressor overload protection
	◉ 2 times		Pump fault
	◉ 3 times		Gas leak
◉ 1 time			Room air sensor contact loose / short
◉ 2 times			Indoor coil sensor contact loose / open
◉ 3 times			Outdoor coil sensor contact loose / open

○ ON ○ / ● ON or OFF ◉ BLINKING

Seven Segment Display – SLM3 / Netware 3 (Water Source Split Unit)

Model	Board	Handset
5WMWS 010/015/020/025GR	LWS2.0	SLM3 / Netware 3
5CKWS 020 - 050A/AR	LWS2.0	SLM3 / Netware 3
5CKWS 010 - 020C/CR	LWS2.0	SLM3 / Netware 3
5CCWS 010 - 060C/CR	LWS2.0	SLM3 / Netware 3

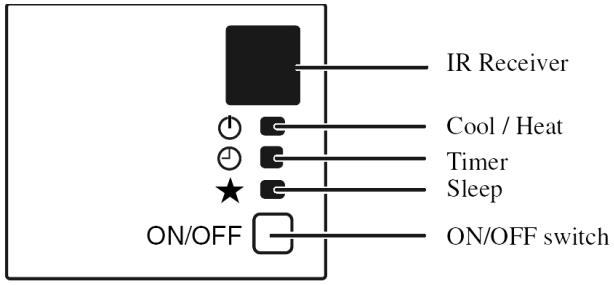
Cooling / Heat pump Model

Seven Segments	Faulty Indication
E1 blinking	Room air sensor contact loose / short
E2 blinking	Indoor coil sensor contact loose
E3 blinking	Outdoor coil sensor contact loose
E4 blinking	Compressor overload protection / Indoor coil sensor short / Outdoor coil sensor short
E5 blinking	Gas leak
E6 blinking	Pump fault*
HEAT LED blinking	Defrost mode (SLM3 only)

*Applicable for Ceiling Cassette Model only.

Inverter-Y Model Indoor Series

Model	Board	Handset
5WMY 010/015/020/025 JR		G17
5CKY 010/015/020CR		G17
5CKY 020/025/028/040/050 ER		G17/ GS01
5CEY 062 CR		GS01
5CEY 020/025/028/040/050 ER		G17/ GS01
5CCY 020/025/028/038/050/060 CR		G17/ GS01



LED Indicator Lights: Normal Operation and Fault Conditions for Heat Pump Unit

★	COOL/HEAT (GREEN/RED)	◔	Operation / Faulty Indication
	○ Green		Cooling mode
	○ Red		Heating mode
	○ Red		Auto mode in heating operation
	○ Green		Auto mode in cooling operation
	○	○	Time Off (when unit is on)
		○	Time On (when unit is off)
○	○		Sleep mode on
	○ Green		Fan mode on
	○ Green		Dry Mode on
	◉ Green		Defrost operation
	◉ Red		Error indication

○ ON ◉ Blinking

Inverter-Y Model Indoor Series

Error Code Diagnosis by Wireless Handset G17

Diagnosis Step

1. Hold down TIMER CANCEL button for 5 seconds, a "88" indication flashes on the temperature display section.
2. Press TIMER CANCEL repeatedly until indoor buzzer produces a long beep. This indicates the error code, refers to Error Codes table and is displayed on the temperature display section.
3. A short beep or two consecutive beeps indicate non-corresponding error codes.
4. To cancel the error code display, hold down TIMER CANCEL button for 5 seconds. Alternatively, the code display will cancel itself if the button is not pressed for 1 minute.

Seven Segment Display by Wired Controller – Netware 3

Model	Board	Handset
CKY 010/015/020CR		Netware 3
CKY 020/025/028/040/050 ER		Netware 3
CEY 062 CR		Netware 3
CEY 020/025/028/040/050 ER		Netware 3
CCY 020/025/028/038/050/060 CR		Netware 3

Error Codes

Error Codes	Error Description
0	Normal
U0	Insufficient gas
U2	DC voltage out of range
U4	Communication error
U7	Signal transmission error (on outdoor unit PCB)
UA	Installation error
UF	Communication Error (indoor and outdoor) piping and wiring
UH	Anti-freeze function in other room
A1	Indoor PCB error
A3	Water pump error
A5	Antifreeze
A6	Indoor fan motor abnormal
C4	Indoor heat exchanger thermistor short/ open
C9	Indoor room thermistor short/ open
E1	Outdoor PCB error
E3	High pressure protection
E4	Low pressure protection
E5	Compressor motor lock
E6	Compressor start-up error
E7	Outdoor DC fan motor lock
E8	Ac input over current
E9	EXV error
EA	4-way valve error
F3	Discharge pipe overheat

Error Codes	Error Description
F6	Heat exchanger overheat
H0	Compressor sensor system abnormality
H3	High pressure switch error
H6	Position sensor abnormality
H8	AC current sensor error
H9	Outdoor air thermistor short / open
J1	Pressure sensor error
J3	Compressor discharge pipe thermistor short /open / misplaced
J5	Suction pipe thermistor short/ open
J6	Outdoor heat exchanger
J7	Subcooling heat exchanger thermistor short/ open
J8	Liquid pipe thermistor short/ open
J9	Gas pipe thermistor abnormality
LC	Communication error (control PCB and inverter PCB)
L1	Outdoor PCB error
L3	Electrical box temperature rise
L4	Heat sink overheat
L5	IPM error / IGBT error
L8	Electrical thermal switch
L9	Stall prevention
P1	Open phase or voltage unbalance
P4	Heat sink thermistor short / open
PJ	Capacity setting error

Single Split Inverter – Y Model Outdoor Unit

Model	Board	Handset
5LCY 010/015/020/025 DR	W_2_03A	G17
5LCY 030/040/0500/60 DR	W_2_03A	G17

Error code diagnosis by Outdoor 7-segment Display

In the Y-series model, the 7-segment display section on the outdoor unit indicates the following:
1. Unit running parameters
2. Error codes

Unit Condition	Display on 7-segment
Unit in normal operating mode	1. Flashes the compressor running frequency for up to 30 minutes after first start-up/ tact switch is pressed. 2. Subsequently, press on the tact switch to return to the above display. 3. Flashes up to 11 running parameters when tact switch is pressed in the sequence corresponding to the parameter number (refer to Unit Running Parameter Table).
Unit is in fault	1. Flashes unit error code (similar to wireless handset) 2. Flashes up to 11 running parameters when tact switch is pressed in the sequence corresponding to the parameter number (refer to Unit Running Parameter Table).

Unit Running Parameter

Parameter Number	Parameter Description	Unit/ Range
00	Compressor actual rotation	r/s
01	Compressor target rotation	r/s
02	Dc bus voltage	VDC
03	Total current (x10)	A
04	Outdoor air temperature	℃
05	Outdoor heat exchanger temperature	℃
06	Compressor discharge temperature	℃
07	Outdoor heat sink temperature	℃
08	Indoor air temperature	℃
09	Indoor heat exchanger temperature	℃
10	EXV Opening	Pulse
11	Outdoor fan speed	W0-W6
12	Horse power	15: 1.5hp
13	Software Version (Production)	
14	Software version (development)	
15	3 minutes count up stop timer	
16	Communication stage	0-3
17	Indoor On/ Off	0-OFF, 1-ON
18	Delta D	
19	Running mode	0-Fan, 1-Heat, 2-Cool
20	Start up timer	
21	Comp initial control flag ok	
22	Fuzzy control Delta H	
23	Comp freq set pointer	
24	Comp stop pointer	
25	Comp limit pointer	
26	Comp limit speed	Max r/s
27	Discharge high temp zone	0-Normal, Other-Active
28	High pressure zone	0-Normal, Other-Active
29	Current control zone	0-Normal, Other-Active
30	Oil return status	0-Normal, Other-Active

Parameter Number	Parameter Description	Unit/ Range
31	De-ice setting	0-Normal, Other-Active
32	Dew drop setting	0-Normal, Other-Active
33	Heat sink protection zone	0-Normal, Other-Active
34	Turbo setting	0-Normal, Other-Active
35	Silent setting	0-Normal, Other-Active
36	Low ambient zone	0-Normal, Other-Active
37	Defrost status	0-Normal, Other-Active
38	Pump down status	0-Normal, Other-Active
39	O/D output flag	0-Comp off, 1-Comp ON
40	O/D output capacity	In %
41	Target discharge temp	
42	EXV control status	0-Initial, 1-Feedback
43	Indoor fan tap	
44	O/D error code	
45	I/D error code	
46	Low voltage control zone	0-Normal, Other-Active
47	Gas leak detection	0-Normal, Other-Active
48	Discharge sensor disconnected	0-Normal, Other-Active
49	Official test setting	0-Normal, Other-Active
50	Skip frequency flag	0-Normal, Other-Active
51	Last O/D error code	
52	2nd last O/D error code	
53	3rd last O/D error code	

Error Code Diagnosis by Unit Last State Memory

1. Remove battery from remote controller
2. Replace battery again into remote controller
3. Press Mode & ON/OFF buttons together
4. Press Mode button to 5:00
5. Press ON/OFF once
6. Repeat the fault diagnosis steps by wireless handset G18

Multi Split Inverter – Y Outdoor Unit

Model	Board	Handset
5MSY 025/030 BR		G17

Error code diagnosis by Outdoor 7-segment Display

The outdoor unit LED indicates the running condition of the system:

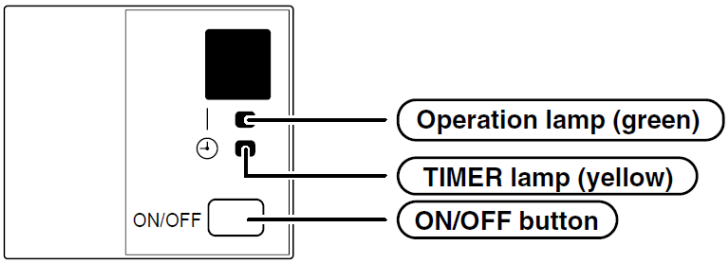
LED INDICATION					Description
Green	Red				
A	1	2	3	4	
◑	●	●	●	●	NORMAL
					INSTALLATION ERROR
					ANTIFREEZE (OTHER ROOMS)
◑	●	●	●	○	HEAT SINK OVERHEAT
◑	●	●	○	●	IPM ERROR / IGBT ERROR
◑	●	●	○	○	INSUFFICIENT GAS
◑	●	○	●	○	AC INPUT OVER CURRENT
◑	●	○	○	●	COMPRESSOR START-UP ERROR
◑	●	○	○	○	COMMUNICATION ERROR (OUTDOOR CONTROL PCB AND IPM PCB)
◑	○	●	●	●	4 WAY VALVE ERROR
◑	○	●	●	○	DC VOLTAGE OUT OF RANGE
◑	○	●	○	●	COMPRESSOR MOTOR LOCK / COMPRESSOR OVERLOADED
◑	○	●	○	●	DISCHARGE PIPE OVERHEAT
◑	○	●	○	○	ANTIFREEZE (COOLING) / HEAT EXCHANGER OVERHEAT (HEATING)
					HEAT EXCHANGER OVERHEAT
◑	○	○	●	●	COMPRESSOR SENSOR SYSTEM ERROR
					COMPRESSOR FEEDBACK DETECTION ERROR
					AC CURRENT SENSOR ERROR
					OUTDOOR AIR THERMISTOR SHORT/OPEN
					COMPRESSOR DISCHARGE PIPE THERMISTOR SHORT / OPEN / MISPLACED
					OUTDOOR HEAT EXCHANGER THERMISTOR SHORT/ OPEN
					LIQUID PIPE THERMISTOR SHORT/ OPEN
					GAS PIPE THERMISTOR SHORT/OPEN
					HEAT SINK THERMISTOR SHORT / OPEN
◑	○	○	●	○	OUTDOOR CONTROL BOX OVERHEAT
◑	○	○	○	●	OUTDOOR PCB ERROR
◑	○	○	○	○	OUTDOOR DC FAN MOTOR LOCK

◑ Blinks
● Off
○ On

Wall Mounted K-Series Inverter-Y model

Model	Board	Handset
5WMY 010/015 KR	2P206569-4	APJ1

Indoor LED Indication

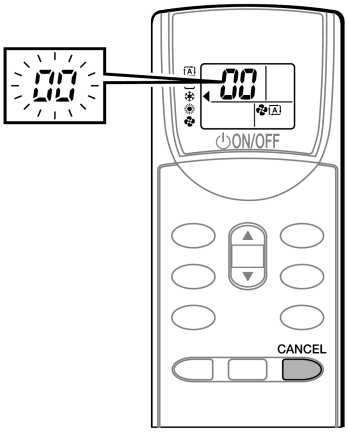


The operation lamp flashes when any of the following errors is detected.
1. When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.
2. When a signal transmission error occurs between the indoor and outdoor units.

Error code diagnosis conducted by Wireless Handset APJ1

The wireless handset can receive a corresponding error code from the indoor unit.

1. When CANCEL is held down for 5 seconds, a "00" indication blinks on the temperature display section.
2. Press CANCEL repeatedly until a continuously beep is produced.



The code indication changes in the sequence shown below, and notifies with a long beep.

CATEGORY	CODE	DESCRIPTION
SYSTEM	00	NORMAL
	UA	INDOOR-OUTDOOR UNIT COMBINATION FAULT
	U0	REFRIGERANT SHORTAGE
	U2	DROP VOLTAGE OR MAIN CIRCUIT OVERVOLTAGE
	U4	FAILURE OF TRANSMISSION (BETWEEN INDOOR UNIT AND OUTDOOR UNIT)
INDOOR UNIT	A1	INDOOR PCB DEFECTIVENESS
	A5	HIGH PRESSURE CONTROL OR FREEZE-UP PROTECTOR
	A6	FAN MOTOR FAULT
	C4	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	C9	FAULTY SUCTION AIR TEMPERATURE SENSOR

CATEGORY	CODE	DESCRIPTION
OUTDOOR UNIT	EA	COOLING-HEATING SWITCHING ERROR
	E1	CIRCUIT BOARD FAULT
	E5	OL STARTED
	E6	FAULTY COMPRESSOR START UP
	E7	DC FAN MOTOR FAULT
	E8	OVERCURRENT INPUT
	F3	HIGH TEMPERATURE DISCHARGE PPE CONTROL
	F6	HIGH PRESSRUE CONTROL (IN COOLING)
	H0	SENSOR FAULT
	H6	OPERATION FAULT DUE TO FAULTY POSITION DETECTION SENSOR
	H8	DC CURRENT SENSOR FAULT
	H9	FAULTY SUCTION AIR TEMPERATURE SENSOR
	J3	FAULTY DISCHARGE PIPE TEMPERATURE SENSOR
	J6	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	L3	ELECTRICAL PARTS HEAT FAULT
	L4	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
	L5	OUTPUT OVERCURRENT
	P4	FAULTY INVERTER CIRCUIT HEATSINK TEMPERATURE SENSOR

Note:

1. A short beep and 2 consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the CANCEL down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

Multi Digital Scroll Indoor Units

Model	Board	Handset
WMD 009/010/015/020/025 G	MC201-C	G17
CKD 020/025/030/040/050 A	MC201-C	G17
CKD 010/015/020 C	MC201-C	G17
CCD 010/015/020/025/030/040/050/060 C	MC201-C	MC301
CMD 020/025/028 E	MC201-C	G17
CMD 040/050 D	MC201-C	G17
CMD 062 C	MC201-C	G17
DBD 080/0100	MC201-A	MC301
5WMD 009/100/015/020/025 G	MC201-C	G17
5CKD 020/025/030/035/040/050 A	MC201-C	G17
5CKD 010/015/020 C	MC201-C	G17
5CCD 010/015/020/025/030/040/050/060 C	MC201-C	MC301
5CMD 020/025/028 E	MC201-C	G17
5CMD 040/050 D	MC201-C	G17
5CMD 062 C	MC201-C	G17
DBD 080/100	MC201-A	MC301

Indoor Error Code

Error Diagnosis by Indoor Unit LED Indicator

ITEM	TYPE	HEAT	SLEEP/ FAN	DRY
1	Indoor Sensor Error	●	●	◑
2	Indoor Pump Error	●	◑	●
3	Communication Error	◑	●	●
4	Outdoor Sensor Error	●	◑	◑
5	Compressor Overload	◑	●	●
6	Pressure Switch Trip	◑	●	◑
7	Pressure Sensor Error	◑	◑	○
8	System Failure	◑	◑	◑
9	Others	◑	○	○

● OFF
○ ON
◑ Blinking

Error Diagnosis by Wired Controller (MC301)

ITEM	CODE	DESCRIPTION
1	E0	System malfunction
2	E1	Sensor Broken (TH1 discharge Temp.)
3	E2	Sensor Broken (TH2 inlet coil 1#)
4	E3	Sensor Broken (TH3 mid coil 1#)
5	E4	Sensor Broken (TH4 inlet coil 2#)
6	E5	Sensor Broken (TH5 mid coil 2#)
7	E6	Sensor Broken (TH6 inlet coil 3#)
8	E7	Sensor Broken (TH7 mid coil 3#)
9	E8	Sensor Broken (TH8 ambient temp)
10	E9	Sensor Broken (TH9 outlet coil)
11	EA	Sensor Broken (TH10 subcool outlet)
12	EB	Sensor Broken (TH11 subcool suction)
13	EC	Sensor Broken (TH12 suction)
14	EF	Emergency Run
15	F0	Outdoor Storage Malfunction
16	F1	Sensor Broken (indoor inlet coil)
17	F2	Sensor Broken (indoor mid coil)
18	F3	Sensor Broken (indoor outlet coil)
19	F4	Sensor Broken (indoor return air)
20	F5	Sensor Broken (indoor supply air)
21	F6	Indoor and controller communication malfunction
22	F7	Ambient temp exceed the limit
23	F8	4WV malfunction
24	F9	Refrigerant leakage
25	FA	Controller storage malfunction
26	FB	Water Pump (indoor water pump)
27	FC	Indoor and outdoor communication malfunction
28	FE	Outdoor master and slave communication malfunction
29	H0	Digital comp overload
30	H1	Fixed Comp1 overload
31	H2	Fixed Comp2 overload
32	H3	Fixed Comp3 overload
33	H4	High pressure too high
34	H5	Sensor broken, high pressure
35	H6	Discharge temp too high
36	L0	Super heat too low
37	L1	Low pressure too low
38	L2	Sensor broken, low pressure
39	10	System malfunction
40	11	Sensor broken (slave TH1 discharge temp)
41	12	Sensor broken (slave TH2 inlet coil 1#)
42	13	Sensor Broken (slave TH3 mid coil 1#)
43	14	Sensor broken (slave TH4 inlet coil 2#)
44	15	Sensor broken (slave TH5 mid coil 2#)
45	16	Sensor broken (slave TH6 inlet coil 3#)
46	17	Sensor broken (slave TH7 mid coil 3#)
47	18	Sensor broken (slave TH8 ambient temp)
48	19	Sensor broken (slave TH9 outlet coil)
49	1A	Sensor broken (slave TH10 subcool outlet)
50	1B	Sensor broken (slave TH11 subcool suction)
51	1C	Sensor Broken (slave TH12 suction)
52	1F	Emergency run (slave)
53	20	Outdoor storage (slave)
54	27	Ambient temp exceed the limit (slave)
55	28	4WV malfunction (slave)
56	29	Refrigerant leakage (slave)
57	30	Digital comp overload (slave)
58	31	Fixed comp1 overload (slave)
59	32	Fixed comp2 overload (slave)
60	33	Fixed comp 3 overload (slave)
61	34	High pressure too high (slave)
62	35	Sensor broken, high pressure (slave)
63	36	Discharge temp too high (slave)
64	40	Super heat too low (slave)
65	41	Low pressure too low (slave)
66	42	Sensor broken, low pressure (slave)

Multi Digital Scroll Outdoor Units

Model	Board	Handset
MDS 030/040/050/060/070 A/AR	-	G17/ MC301
MDS 080/100/120/150/180/200/240/ 260/300/320 B/BR	-	G17/ MC301
5MDS 080/100/120/140/160/180/ 200/220/240/260/280/300/320/340/360 /380/400/420/440/460/480/500 B/BR	-	G17/ MC301

Outdoor Error Code

Error code diagnosis by PCB four Digit 7-Segment

MDS Outdoor A Series Error Code

ITEM	CODE	DESCRIPTION
1	E0	Discharge temperature sensor malfunction
2	E1	Outdoor ambient temperature sensor malfunction
3	E2	Suction temperature sensor malfunction
4	E3	Compressor base temperature sensor malfunction
5	E4	Coil inlet temperature sensor malfunction
6	E5	Coil middle temperature sensor malfunction
7	E6	Coil outlet temperature sensor malfunction
8	E7	Compressor discharge temperature too high > 130ºC
9	E8	General system failure
10	H1	High pressure trip
11	H2	Digital scroll compressor overload
12	H3	Fixed scroll compressor overload
13	L1	Low pressure trip
14	C-	Communication failure between outdoor and all indoors
15	CX	“X” indoor no. particular indoor no communication

MDS Outdoor B Series Error Code

ITEM	CODE	DESCRIPTION
0	EC00	00## indoor unit communication
1	EC01	01# indoor unit communication failure
2~47	….	02~47# indoor unit communication failure
48	ER48	Digital Compressor Overload
49	ER49	Fix 1 Compressor Overload
50	ER50	Fix 2 Compressor Overload
51	ER51	Fix 3 Compressor Overload
52	ER52	Discharge pressure too high
53	ER53	Suction pressure is too low
54	ER54	Outdoor unit’s IC error
55	ER55	System Error
56	ER56	Discharge temperature is too high
57	ER57	-
58	ER58	4 way valve failure
59	ER59	Ambient temperature is beyond the limit
60	ER60	Emergency run
61	ER61	Subheating is beyond the limit

ITEM	CODE	DESCRIPTION
62	EC62	Refrigerant released
63	EC63	Slaver outdoor unit communication failure
64	ER64	TH1 temperature sensor failure
65	ER65	TH2 temperature sensor failure
66	ER66	TH3 temperature sensor failure
67	ER67	TH4 temperature sensor failure
68	ER68	TH5 temperature sensor failure
69	ER69	TH6 temperature sensor failure
70	ER70	TH7 temperature sensor failure
71	ER71	TH8 temperature sensor failure
72	ER72	TH9 temperature sensor failure
73	ER73	TH10 temperature sensor failure
74	ER74	TH11 temperature sensor failure
75	ER75	TH12 temperature sensor failure
76	ER76	Discharge pressure sensor failure
77	ER77	Suction pressure sensor failure
78	ER78	All indoor units Communication Failure

For item 0-47, the last two characters indicate which indoor has communication problem.

7.2 General Check

When any air conditioner malfunction is noted, immediately switch off the power supply to the unit and contact the local dealer if necessary.

Problem Symptom	Check Item	Suggested Action
The unit does not work	Check the power supply	Check to make sure that the rated voltage is supplied.
	Check the fuse	Check and replace the fuse.
	Check the remote controller timer setting	Make sure the delay timer is set correctly.
Fan does not work	Check the power supply	Check to make sure that the rated voltage is supplied.
	Check the fan motor capacitor	Check and replace the capacitor.
	Check the fan motor	Check and replace the fan motor.
	Check the switch	Check and change the switch.
Fan work, but compressor does not work	Check if the thermostat setting too high	Reset thermostat.
	Check the compressor capacitor	Check and replace the capacitor.
	Check the compressor	Check and replace the compressor.
	Check the compressor contactor	Check and replace the contactor.
Air conditioner work but cooling not satisfactory	Check if the thermostat setting too high	Reset thermostat.
	Check if the condenser coil dirty	Clean the condenser coil.
	Check the condenser installation condition	Make sure the condenser is installed according to factory's recommendation.
	Diagnosis by service port pressure and operating Current	Check for insufficient refrigerant.
The air flow is too low	Check the air filter	Check and make sure the air filter is clean.
	Check the fan / blower condition	Check and make sure that the fan / blower are in good condition.
The remote controller light is dim	Check the battery	Check and replace the battery.
		Make sure the batteries are correctly inserted.

7.3 General Troubleshooting Guide

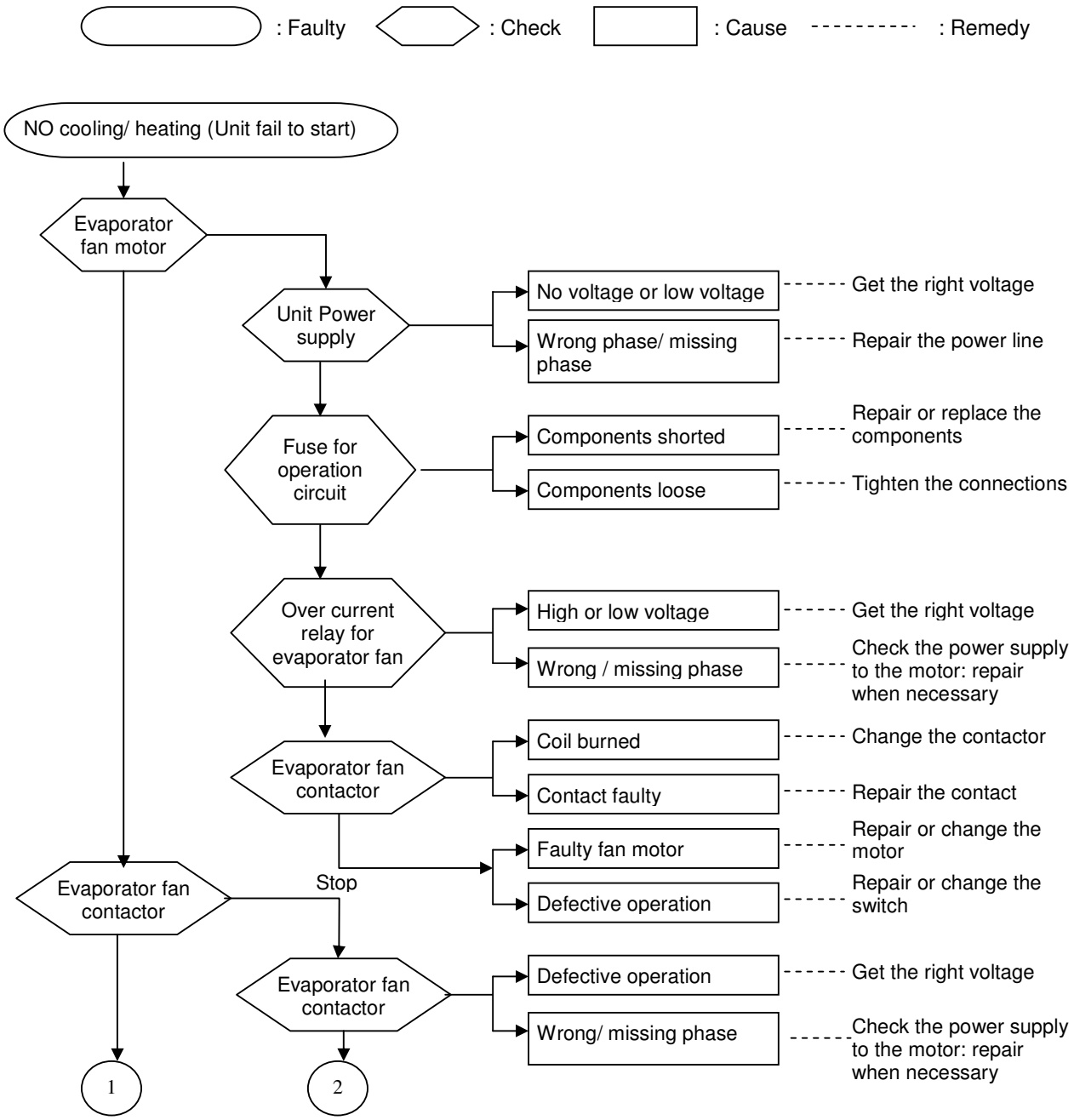
By means of pressure readings.

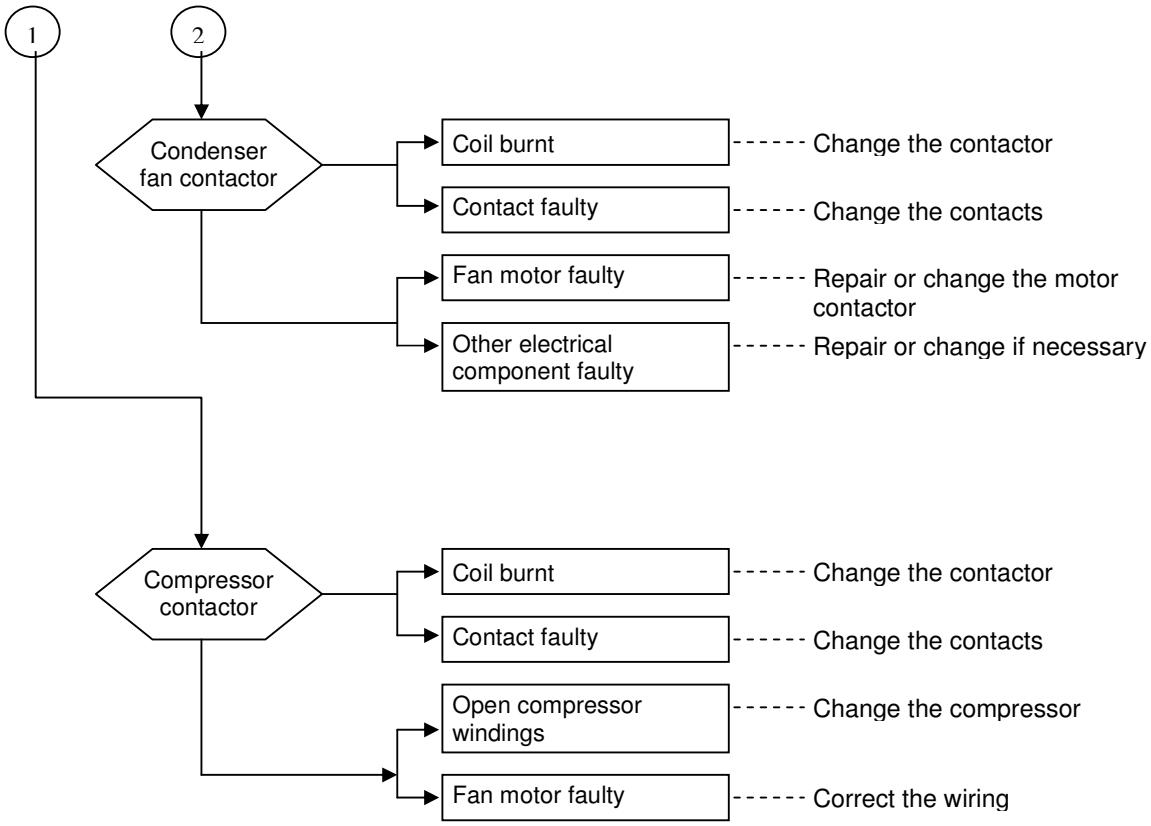
Pressure						Probable Cause
Data / Circuit	Too Low	A Little Low	Normal	A Little High	Too High	
High Side Low Side					● ●	1. Overcharged with refrigerant. 2. Non-condensable gases in refrigerant circuit (eg. Oil) 3. Obstructed air-intake / discharge. 4. Short circuit of hot air at condensing unit.
High Side Low Side	●				●	1. Poor compression / no compression (compressor defective). 2. Check valve stick in open position. 3. Reversing valve leaking (for heatpump only).
High Side Low Side	●	●				1. Undercharged with refrigerant. 2. Refrigerant leakage. 3. Air filter clogged / dirty (indoor unit). 4. Indoor fan locked (cooling). 5. Defective defrosts control, outdoor coil freeze up (heating). 6. Outdoor fan locked (heating).
High Side Low Side				●	●	1. Outdoor fan blocked (cooling). 2. Outdoor coil dirty (cooling). 3. Indoor fan locked (heating). 4. Indoor filter clogged dirty (heating).
High Side Low Side				●	●	1. Air intake temperature of indoor unit too high.

By means of diagnostic flows chart:

Generally, there are two kinds of problems, i.e. starting failure and insufficient cooling/ heating. "Starting failure" is caused by electrical defect while improper application or defects in refrigerant circuit causes "insufficient cooling/ heating".

i) Diagnosis of Electric circuit



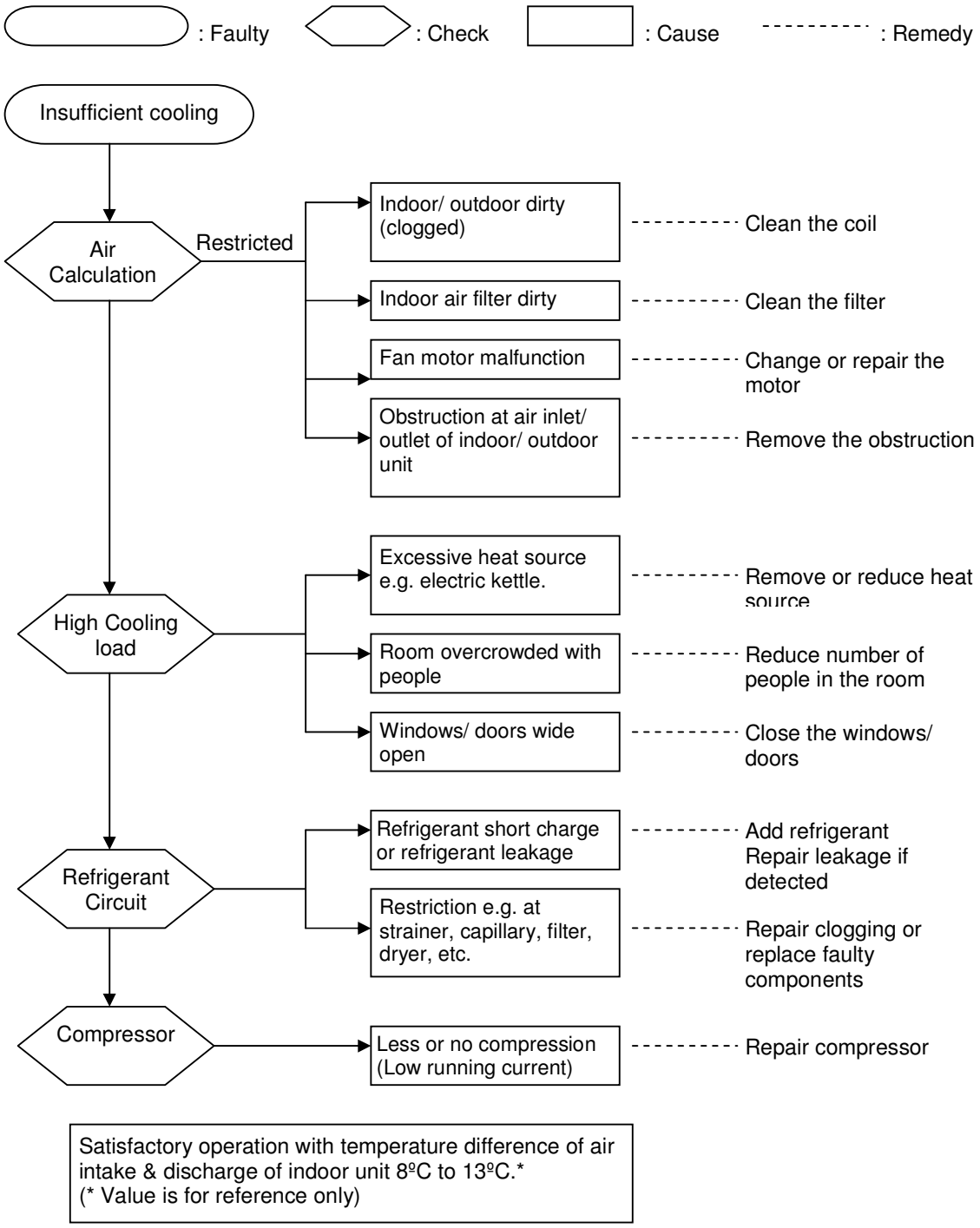


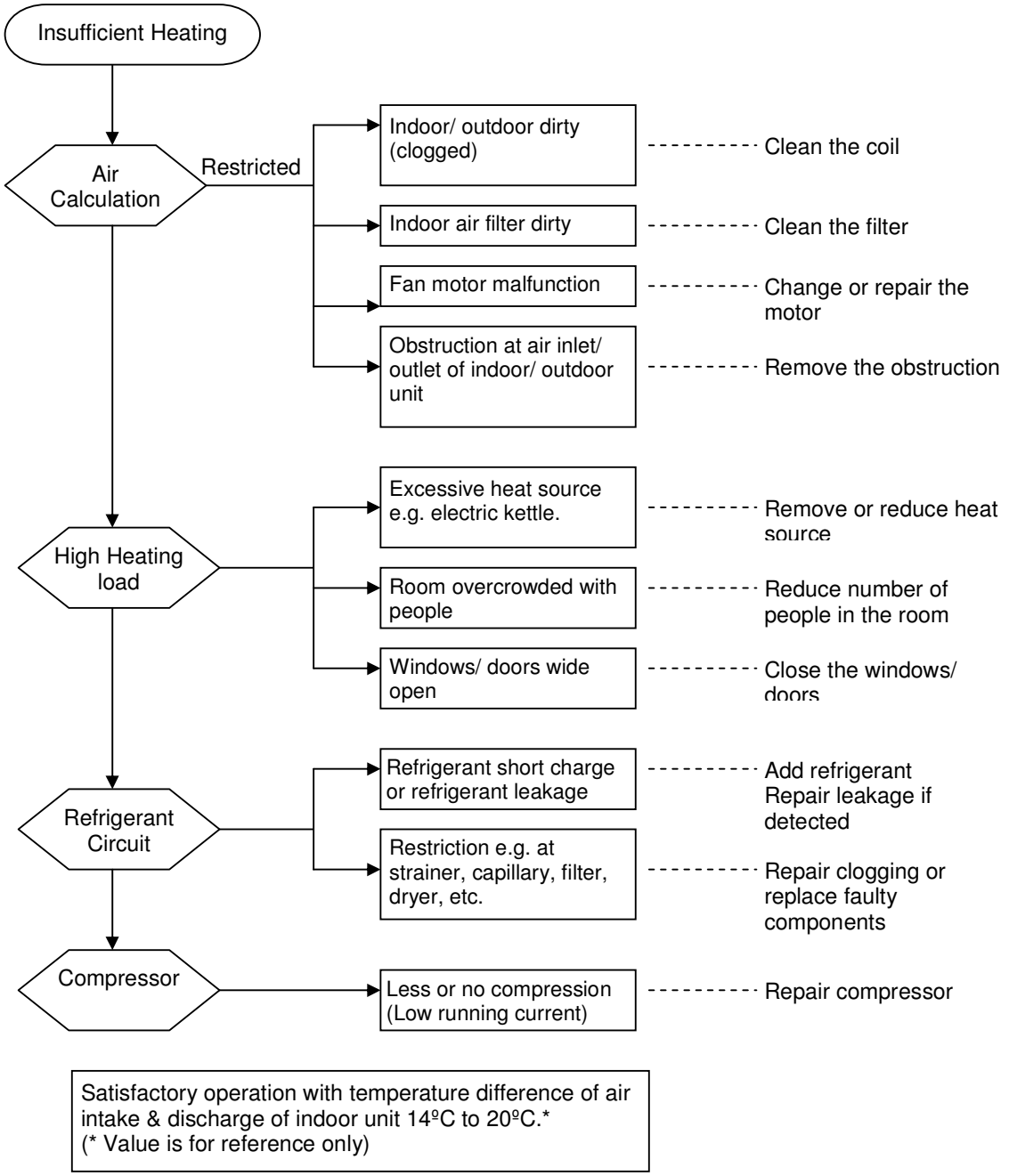
The most common causes of air conditioner failure to 'start' are:

a) Voltage not within ± 10% of the rated voltage.
b) Power supply interrupted
c) Improper control settings
d) Air conditioner is disconnected from main power source
e) Fuse blown or circuit breaker off.

ii) Diagnosis of Refrigerant Circuit/ Application

There might be some causes where the unit starts to run but does not perform satisfactorily, i.e. insufficient cooling. Judgement could be made by measuring temperature difference of indoor unit's intake and discharge air as well as running current.


: Faulty
: Check
: Cause
: Remedy
Insufficient cooling
Air Calculation
Restricted
Indoor/ outdoor dirty (clogged)
Clean the coil
Indoor air filter dirty
Clean the filter
Fan motor malfunction
Change or repair the motor
Obstruction at air inlet/ outlet of indoor/ outdoor unit
Remove the obstruction
High Cooling load
Excessive heat source e.g. electric kettle.
Remove or reduce heat source
Room overcrowded with people
Reduce number of people in the room
Windows/ doors wide open
Close the windows/ doors
Refrigerant Circuit
Refrigerant short charge or refrigerant leakage
Add refrigerant
Repair leakage if detected
Restriction e.g. at strainer, capillary, filter, dryer, etc.
Repair clogging or replace faulty components
Compressor
Less or no compression (Low running current)
Repair compressor
Satisfactory operation with temperature difference of air intake & discharge of indoor unit 8ºC to 13ºC.*
(* Value is for reference only)


Insufficient Heating
Air Calculation
Restricted
Indoor/ outdoor dirty (clogged)
Clean the coil
Indoor air filter dirty
Clean the filter
Fan motor malfunction
Change or repair the motor
Obstruction at air inlet/ outlet of indoor/ outdoor unit
Remove the obstruction
High Heating load
Excessive heat source e.g. electric kettle.
Remove or reduce heat source
Room overcrowded with people
Reduce number of people in the room
Windows/ doors wide open
Close the windows/ doors
Refrigerant Circuit
Refrigerant short charge or refrigerant leakage
Add refrigerant
Repair leakage if detected
Restriction e.g. at strainer, capillary, filter, dryer, etc.
Repair clogging or replace faulty components
Compressor
Less or no compression (Low running current)
Repair compressor
Satisfactory operation with temperature difference of air intake & discharge of indoor unit 14ºC to 20ºC.*
(* Value is for reference only)

Mini Chiller: Troubleshooting Guide

When any malfunction is occurred, immediately switch off the power supply to the unit, and contact the local dealer, if necessary. Some simple troubleshooting tips are given below:

Symptoms	Possible Causes	Remedial Action
1. Compressor does not start	• No power supply • Fuses blown or automatic circuit breakdown open • Defective contactor or coil • Unit is stopped because a safety has tripped • Loose wires • Compressor faulty	• Check power supply • Look for short circuit or grounded wires in motor windings Replace fuses and reset circuit breakers when the fault has been corrected Check tightness and soundness of all electrical connection • Repair or replace • Determine the type of safety shut down and correct the unit is restarted • Check wire connection and tighten terminal screw • Contact local dealer
2. Fan does not start	• No power supply • Fan motor faulty	• Check power supply • Contact local dealer
3. Air conditioning does work, but insufficient cooling	• Thermostat setting too high • Condenser coil dirty • Obstacle blocking air inlet or outlet of the unit • Insufficient refrigerant in the system • Improper water flow rate • Water in the system is contaminated	• Reset thermostat • Contact local dealer • Remove the obstacle • Contact local dealer • Contact local dealer • Contact local dealer

Rooftop: Troubleshooting Guide

Before you ask for repair service, check the following points

Symptoms	Switch Box (Field Supply)	Possible Causes	Troubleshooting
It does not run	Switch (ON)	• Power failure • The power supply is turned OFF • The fuse in the power supply is gone • The earth leakage breaker is gone • The wiring phase of power supply is mistaken	• Press the switch (ON) button after power restoration. • Turn the power supply ON • Replace the fuse • Put in the earth leakage breaker • Modify the wiring phase of power supply
Air flow out but it does not cool enough	Switch (ON)	• Improper temperature adjustment • The filter is filled with dust and dirt • There are some obstacles at the air inlet and outlet of the units • Windows and doors are open	• After checking the set temperature and inlet temperature adjust thermostat (23WA) • Clean the filter • Remove the obstacle • Close the windows and doors
Cool air does not come out	Switch (ON)	• The restart-preventing circuit is in operation for 3 minutes	• Wait for a while (to protect the compressor, a 3 minutes restart-preventing circuit is built into the unit. Therefore, there are occasions sometimes when the compressor does not start running immediately. There are cases when it does not run for as long as 3 minutes)
Fan runs but compressor does not run		• The set temperature of thermostat is too high • The room temperature is excessively low for cooling	• For temperature control, decrease the set temperature at cooling • Can not be operated as it is out of temperature control range
Compressor run but stops immediately		• Air outlet and inlet are blocked	• Remove blocking matter
Water or steam is discharged from the unit		• At cooling, water which places to cooling piping and piping connection part drops	• It is not a breakdown. Please use it as it is

Appendix

Resistance – Temperature Characteristics

Type DTN-C1 03F3H-OYL 1128, 1148, 1158
Material Name 3H
Resistance R25=10.000kΩ + 1.0% - 1.0%
B Value B25/30=3450K + 1.0% - 1.0%

t℃	Rmin (kΩ)	Rnom (kΩ)	Rmax (kΩ)	t℃	Rmin (kΩ)	Rnom (kΩ)	Rmax (kΩ)
-10	4.42E+01	4.53E+01	4.65E+01				
-8	4.02E+01	4.12E+01	4.22E+01	42	5.28E+00	5.37E+00	5.45E+00
-6	3.66E+01	3.74E+01	3.83E+01	44	4.92E+00	5.01E+00	5.09E+00
-4	3.33E+01	3.41E+01	3.49E+01	46	4.59E+00	4.67E+00	4.76E+00
-2	3.04E+01	3.11E+01	3.18E+01	48	4.29E+00	4.37E+00	4.42E+00
0	2.78E+01	2.84E+01	2.90E+01	50	4.01E+00	4.09E+00	4.16E+00
2	2.54E+01	2.59E+01	2.65E+01	52	3.75E+00	3.82E+00	3.90E+00
4	2.33E+01	2.37E+01	2.42E+01	54	3.51E+00	3.58E+00	3.65E+00
6	2.14E+01	2.18E+01	2.21E+01	56	3.29E+00	3.36E+00	3.43E+00
8	1.96E+01	2.00E+01	2.03E+01	58	3.08E+00	3.15E+00	3.22E+00
10	1.80E+01	1.83E+01	1.86E+01	60	2.89E+00	2.96E+00	3.01E+00
12	1.66E+01	1.69E+01	1.71E+01	62	2.71E+00	2.78E+00	2.84E+00
14	1.53E+01	1.55E+01	1.57E+01	64	2.55E+00	2.61E+00	2.67E+00
16	1.41E+01	1.43E+01	1.45E+01	66	2.40E+00	2.45E+00	2.51E+00
18	1.30E+01	1.32E+01	1.33E+01	68	2.25E+00	2.31E+00	2.37E+00
20	1.20E+01	1.22E+01	1.23E+01	70	2.12E+00	2.17E+00	2.23E+00
22	1.11E+01	1.12E+01	1.14E+01	72	2.00E+00	2.05E+00	2.10E+00
24	1.03E+01	1.04E+01	1.05E+01	74	1.88E+00	1.93E+00	1.98E+00
26	9.52E+00	9.62E+00	9.72E+00	76	1.77E+00	1.82E+00	1.87E+00
28	8.82E+00	8.92E+00	9.02E+00	78	1.67E+00	1.72E+00	1.77E+00
30	8.17E+00	8.27E+00	8.37E+00	80	1.58E+00	1.62E+00	1.67E+00
32	7.58E+00	7.68E+00	7.78E+00	82	1.49E+00	1.53E+00	1.58E+00
34	7.04E+00	7.14E+00	7.23E+00	84	1.41E+00	1.45E+00	1.49E+00
36	6.54E+00	6.64E+00	6.73E+00	86	1.33E+00	1.37E+00	1.41E+00
38	6.09E+00	6.18E+00	6.27E+00	88	1.26E+00	1.30E+00	1.34E+00
40	5.67E+00	5.75E+00	5.84E+00	90	1.19E+00	1.23E+00	1.27E+00

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